

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume X.

CHICAGO, ILL., FEBRUARY 22, 1911.

Number 8.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydrated" waterproofing material. "Universal," "Acme" and "Electrold" Brands Ready Roofing. Get our prices.

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Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia





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USED BY U.S. GOVERNMENT RAILROADS CITIES STEEL PLANTS

GUARANTEED TO MEET ALL GOVERNMENT AND STANDARD REQUIREMENTS

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DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

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FIRE BRICK

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Manufactured by **PHOENIX PORTLAND CEMENT CO.** NAZARETH, PA.

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Capacity, 3000 barrels daily

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YOU know what the linings for your cement and lime kilns cost per thousand brick but do you know how much per ton output? That is the cost that is vital, that's why we are anxious you should know. Write us.

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"THE BEST IS NONE TOO GOOD"
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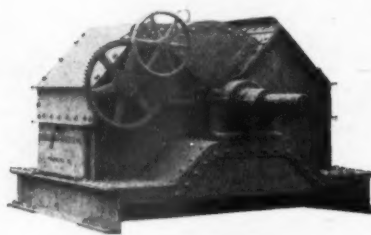
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For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main frame of steel; "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other Hammer Crusher has such a big Safety Factor.

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"THE BEST THAT CAN BE MADE"

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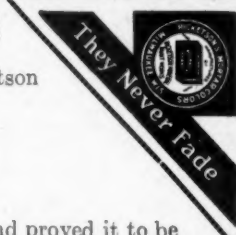
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for Mortar, Brick, Cement, Stone, etc., and proved it to be absolutely permanent. Red, Brown, Buff, Purple and Black.

Ricketson Mineral Paint Works
MILWAUKEE, WISCONSIN



Tell 'em you saw it in ROCK PRODUCTS



Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume X

CHICAGO, ILL., FEBRUARY 22, 1911

Number 8

THE CHICAGO UNION LIME WORKS

Difficult Engineering Problems Solved in the Construction of a Big Crushing Plant Recently Erected.

Located in Thickly Settled Section.

The new crushing plant of the Chicago Union Lime Works, located at Nineteenth and Lincoln streets, in one of the most thickly settled portions of the city, is of unusual interest on account of the many difficult engineering problems that had to be solved in its design and the unique manner in which many of the difficulties were overcome.

The Chicago Union Lime Works' quarry property embraces an entire city block, bounded on the north and south by Eighteenth and Nineteenth streets, respectively, and on the east and west by Lincoln and Robey streets. The quarry was first opened in 1859, at which time it was well outside the limits of the city of Chicago, but the growth of this city has been such that at the present date the property lies within one of the most congested portions of the town, being surrounded on all sides by large manufacturing plants, residences of the employees of these manufacturing plants and industries of every sort.

The quarry excavation occupies about one-half of the property, the balance of the property being devoted to lime kilns, crushing plant and yard purposes. The stone in this deposit is one of the best limestones occurring in the Chicago district, and is very homogeneous in structure, which has made it possible to carry the quarry walls down practically vertically. As a result of some fifty years' operations the depth of the quarry at the present time is 260 feet, while drillings have shown that good stone exists for a considerably greater depth.

One of the most difficult problems confronting the engineers upon building the new plant was, first, the devising of a means for raising the stone from the quarry to the crushing plant on the surface and, second, the installation of such apparatus as might be decided upon, as it was by no means an easy piece of work to attach any sort of a hoisting apparatus to a vertical quarry wall 260 feet in height. The problem was, however, very neatly solved, and at the same time a very economical method devised by the J. C. Buckbee Company, engineers, of Chicago, who were retained by the Chicago Union Lime Works to design and supervise the construction of this entire work.

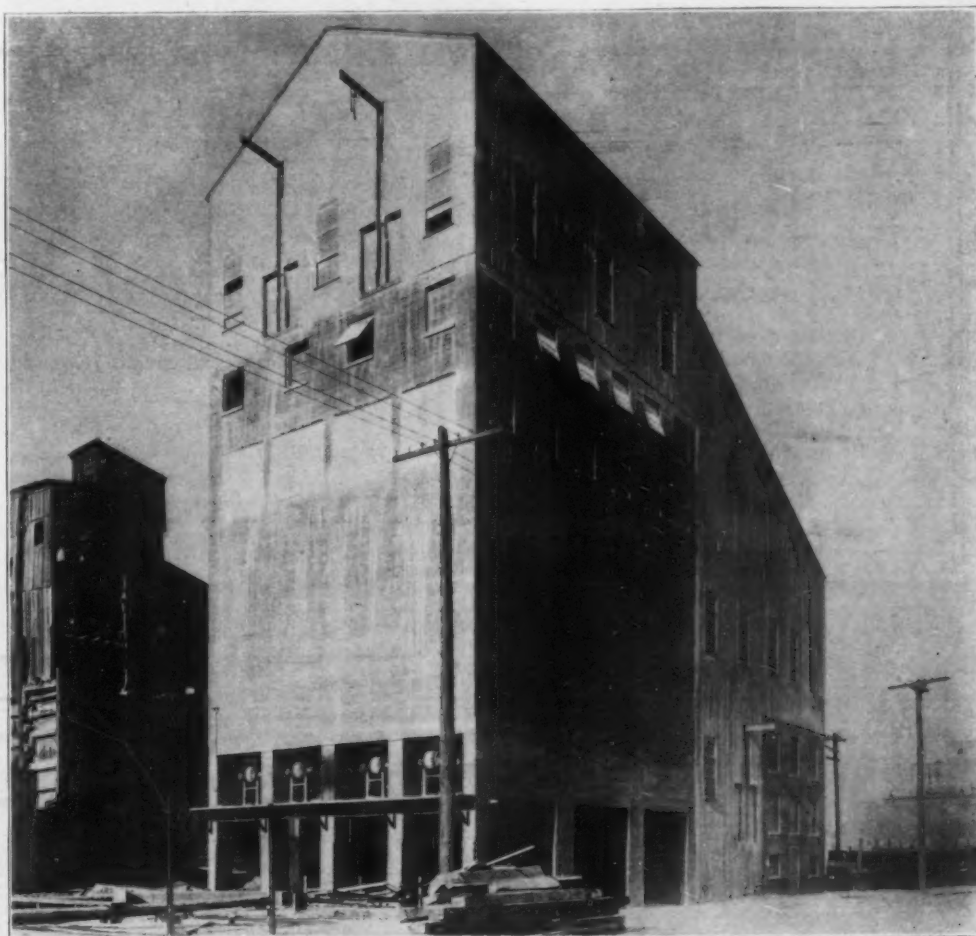
It was decided to use two yard, low-body, end-dump steel cars in the quarry, as the loading in the quarry is all done by hand, and to transport the stone in these cars to the plant, located on the surface. To raise the cars from the quarry level to the crusher floor level of the plant, some 290 feet, it was decided to install two cages, or what is more commonly known as platform elevators, operating in balance, so that the empty car would be going down while the loaded came up. It was further decided to install a steel framework resembling somewhat a bridge, set up on end and anchored to the side wall of the quarry, for the cages to run in, and at first sight it seemed a very difficult job was in store in the erection of this steel framework. The problem, however, was very cleverly solved by J. J. Bassett, of the J. C. Buck-

bee Company, engineer in charge of the work, in the following manner:

A permanent steel tower, constituting the landing stage and support for the cable sheaves of this hoistway, was first erected, the upper section of the hoistway containing the two compartments for the cages, constituting an overhung portion of this tower. This tower rested upon a heavy concrete foundation, setting directly at the edge of the quarry, and the quarry face was cleaned and

trimmed down to good solid stone by lowering men on a scaffold from the surface. The sections of the steel skipway were about ten feet in length, and these were all duplicates with the exception of the length of members extending back to the quarry face, which were made in each case to suit the quarry face. A platform was hung from the above mentioned overhanging portion of the tower, and the first of these sections set in place and riveted

(Continued on Page 42.)



CHICAGO UNION LIME WORKS PLANT, CHICAGO.

Power & Mining Machinery Co.

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Half the weight;
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Half the life;
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Double the strife."

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By reason of many other "reasons",—too numerous to mention here, but which are contained in our new Catalog No. 4-R which is just off the press.

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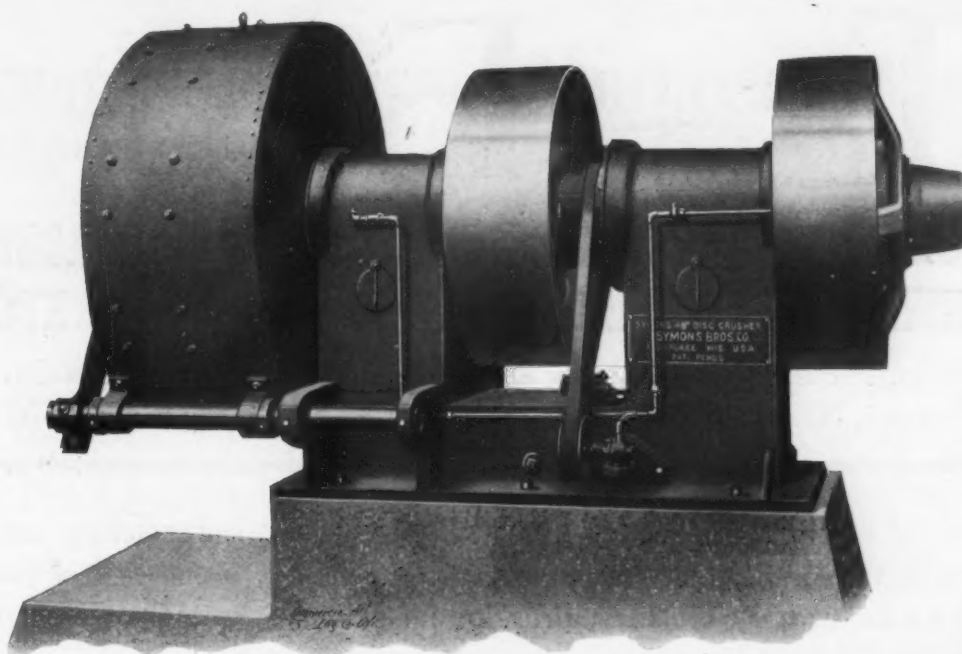
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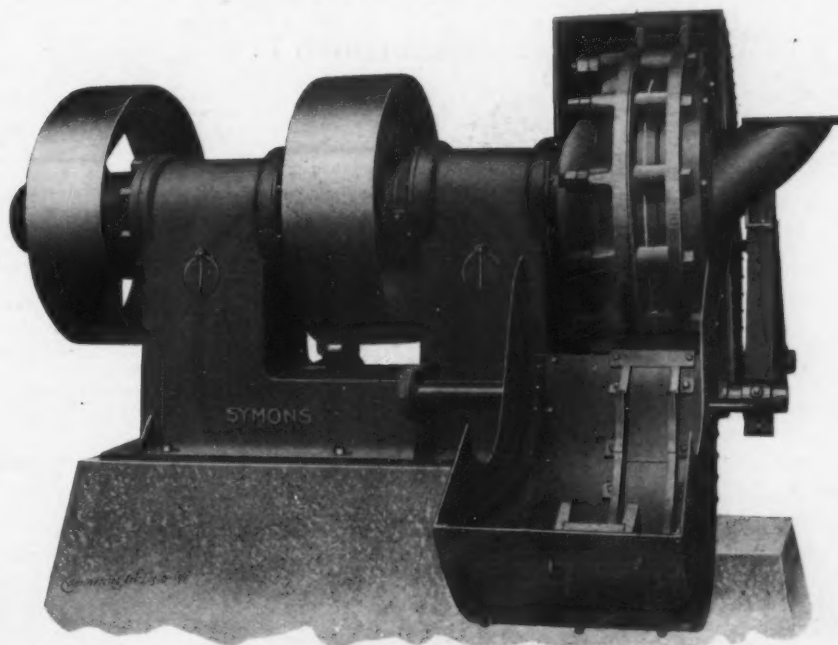
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Has Two Specialties:

1. Crushing boulders or gravel, wet or dry.
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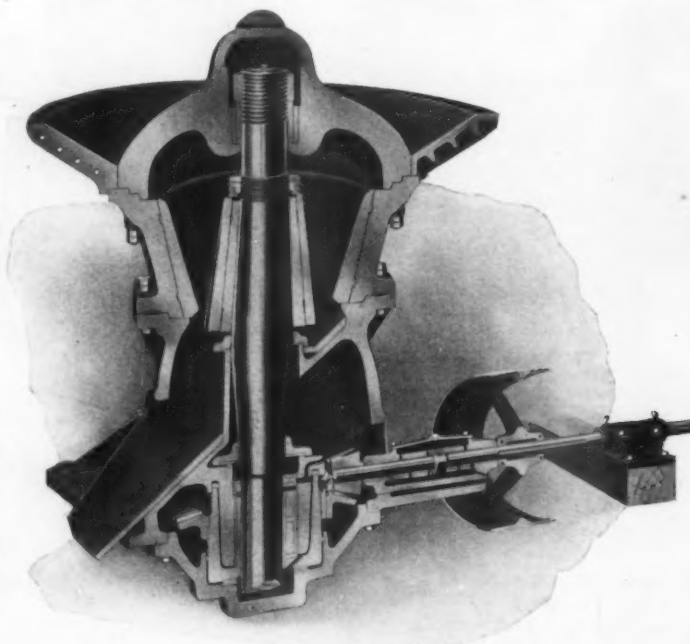
As one of the largest manufacturers of mining, milling and smelting machinery, we desire to announce that we are now building, on a large scale, a full line of rock crushing machinery, such as Gyratory Crushers, Crushing Rolls, Blake & Dodge Crushers, Screens, Elevators, Hoists, Trolleys, Etc.

The Traylor Gyratory Crusher which we build is the result obtained by many years experience in crushing all characters of ore and stone, and was designed to fully meet the requirements of the stone crushing industry.

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1. Main shaft suspended in the hub at the point of least gyration. Positive rolling surface.
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5. Eccentric has a far greater bearing surface than is found in other makes of crushers.
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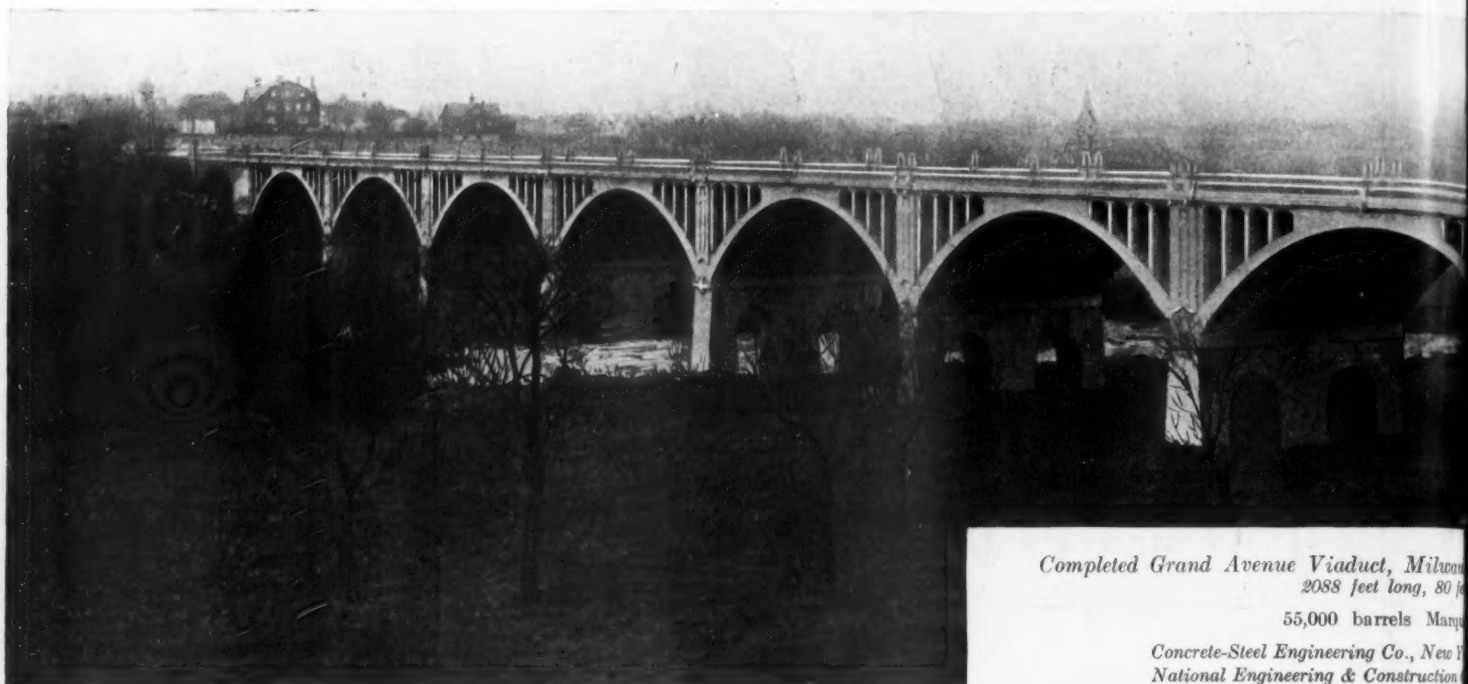
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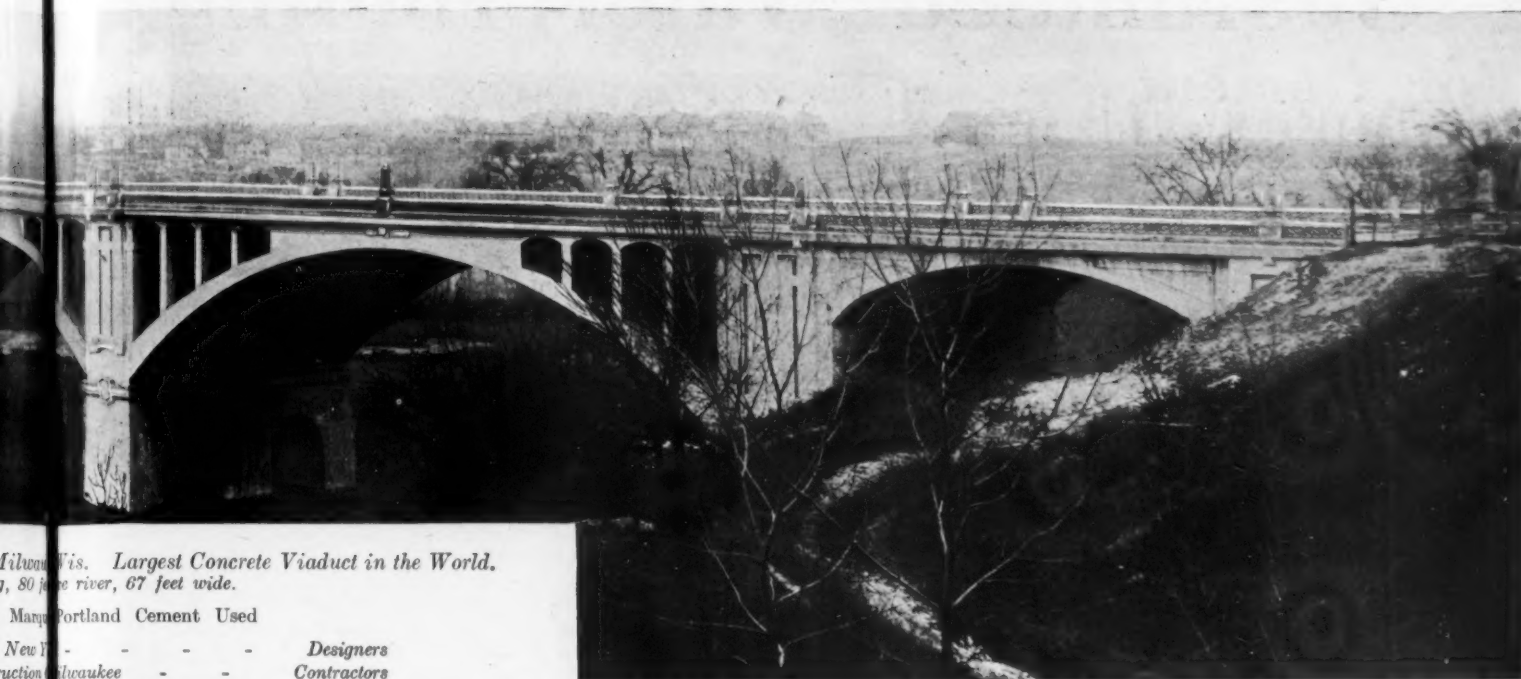
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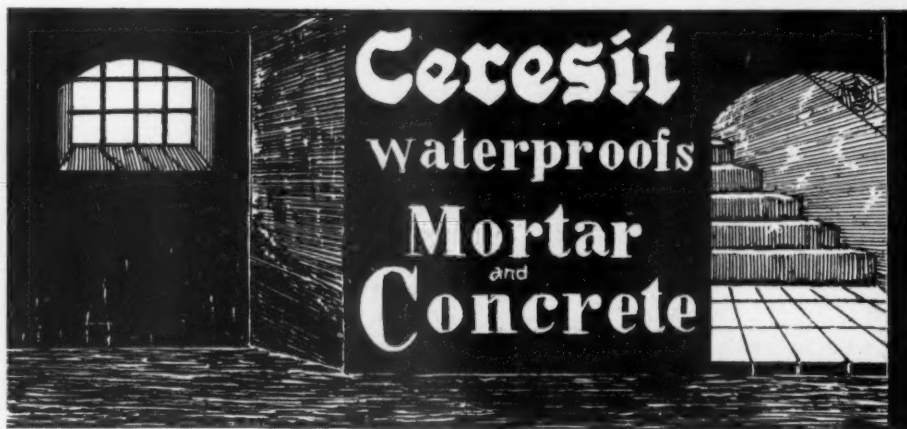
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Finishing, Common, Hydrate, Agricultural.

Sole Eastern Agents

For the renowned

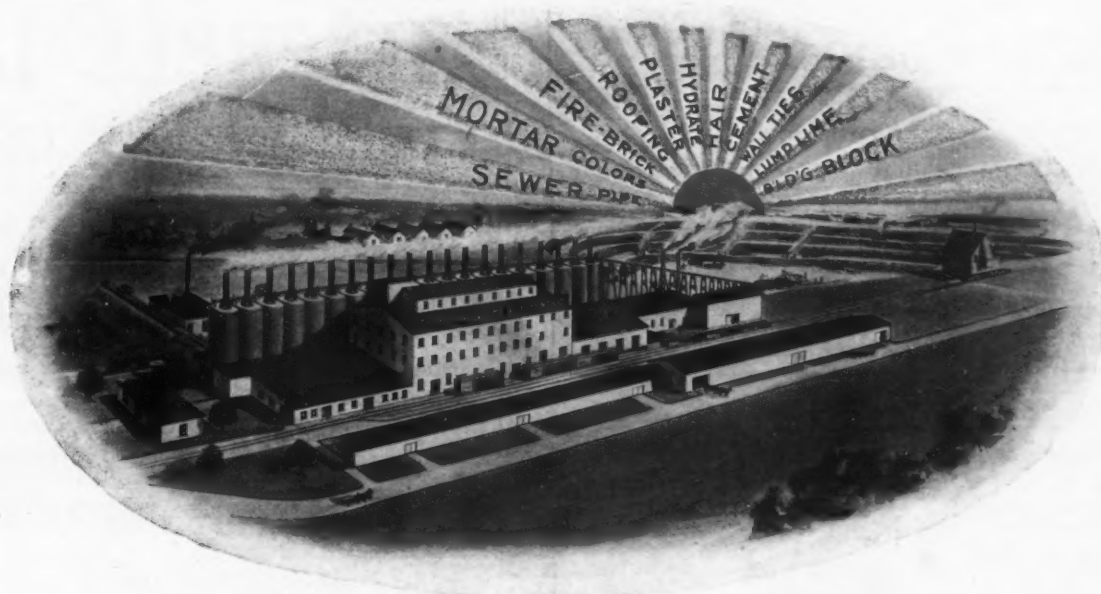
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Prices Cheerfully Submitted

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Cement, Plaster, Hair, Etc., Etc.

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8000 Barrels
Per Day

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WE MAKE IT"

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We are not connected with any Trust or Combination

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HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually **save money**, because the Hydrate **replaces** the same amount of cement (15 to 25%).

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Manufactures **LUMP AND HYDRATED LIME AND LIMESTONE FOR FLUXING**

Dealer in **LUMP AND HYDRATED LIME, CEMENT, PLASTER, MORTAR COLORS, METAL LATH, CORNER BEAD, CHANNEL IRON, ETC.**

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Cement, Jasper Wall Plaster, Brick, Stone

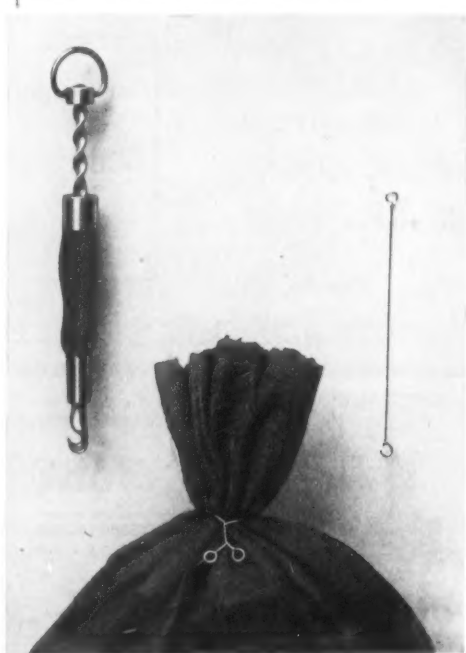
CEMENT WORKS: Austin, Minn.
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Its value to you is greater because—
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—Gauges with a third less plaster—
—Spreads further—
—Easier—
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"We ship sudden"

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CAREY, OHIO

To the Lime Manufacturer:

WE are prepared to grant licenses on a royalty basis for the production of "Alca" Lime Plasters to Lime Manufacturers in the United States and Canada, and to enter into long time contracts for the supply of the aluminous material used in this process.

The reports of our present licenses have convinced us that the production and the sale of "Alca" Lime Plaster is limited only in proportion to the quantity of hydrated lime being manufactured.

We believe our demonstration at the National Convention of the Lime Manufacturers' Association, held in Pittsburg, February 2nd and 3rd, have convinced those present of the value of our processes and we invite all other Lime Manufacturers, with or without hydrating plants, to communicate with us with the view of ascertaining to what extent their present products may be improved.

Aluminate Patents Company

2211 Chestnut Street

PHILADELPHIA, PA.

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Hydrated Lime

Bulletin No. 38

Why Hydrated Lime Should Be Used

It possesses all the good qualities of quick lime without any of its drawbacks.

It is all lime putty. Properly prepared

Hydrated Lime has all the overburned particles, such as grit, stone, air slacked lime, etc., removed in process of manufacture.

It can be purchased in quantity

At a better price and

The Dealer takes no risk of losing anything on the transaction as he buys only powdered lime putty which can be kept indefinitely.

A satisfactory job is always secured when Hydrated Lime is used.

There is no possibility of pitting or popping in any plastering job as all the impurities have been removed in manufacturing.

Time, labor, money is saved in all brick work, as the cost and labor of slacking is eliminated.

One man, consequently, can make, temper and carry the mortar to the wall.

A larger field is opened to the dealer.

It can be sold where it would be impossible to dispose of quick lime; for instance, in dry dusting, in poultry houses, making tree sprays, prepared white washes, disinfectants, cleaning powders, and in numerous other products.

In Concrete Works, its advantages are many and manifold.

1—The concrete works easier under the trowel. It finishes easier.

2—It prevents drying out as quickly as it otherwise would.

3—It improves the color of the finished work.

4—It makes the concrete impervious to water.

5—It improves the strength.

Bear these three facts in mind:

1—The risk of loss incident to the handling of lime with hydrated lime is reduced to a minimum. Right here is a profit to the dealer in hydrated lime that the man who refuses to handle it doesn't enjoy.

2—A more satisfactory product is offered to the trade and complaints and allowances to contractors are eliminated. Here is more money which ordinarily is figured by the dealer as profit when he sells the lime, but which he usually doesn't realize when the contractor pays his bill.

3—A broader market is offered and a steadier all around business can be enjoyed as well as a wider range of trade reached.

Now with these three factors in its favor can any one conceive of the possibility of hydrated lime not succeeding and being more and more used every year?

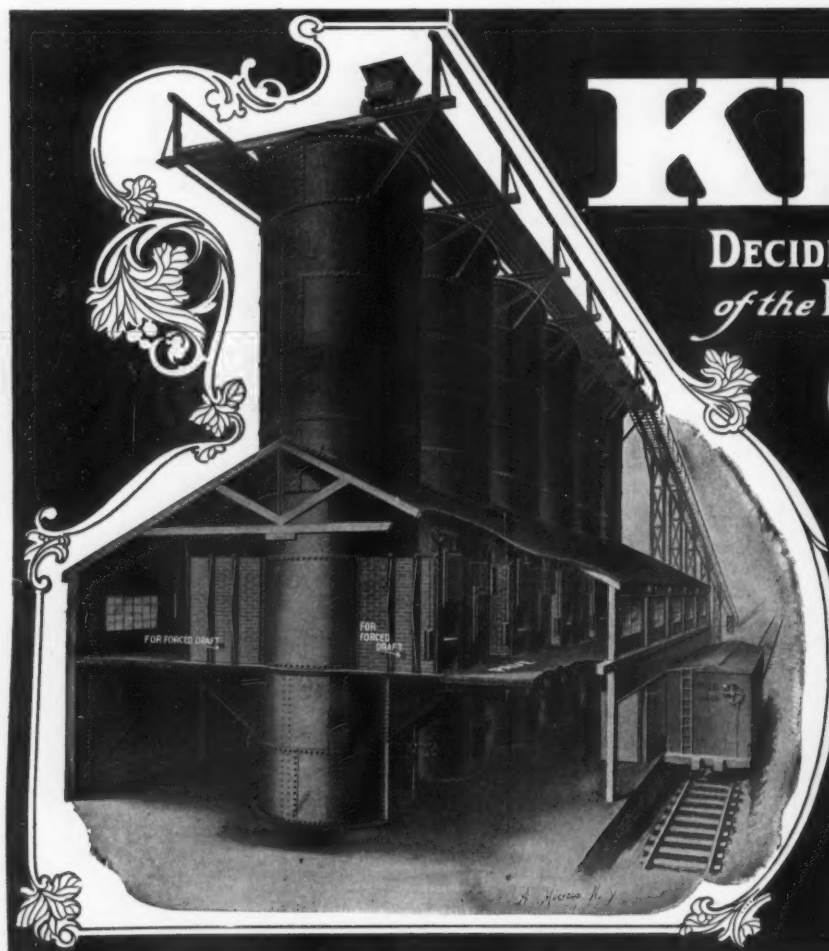
Our Business is the designing and constructing of Hydrating Plants.

To make this up-to-date material, we have the only process that has proved successful in hydrating a High Calcium and Dolomite limes.

It requires about three or four months to build a plant; why not take this matter up with us now and get ready for business?

The Kritzer Company
115 Adams Street CHICAGO, ILLINOIS

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DECIDE *the* EARNING CAPACITY
of *the* LIME MANUFACTURING PLANT

THE KEYSTONE LIME KILNS
(Patented)

*are famous money makers
and express the highest type
of modern development.
There's none quite so good,
and the price is right.*

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MANUFACTURING CO.
YORK · PENNA

The Bradley Producer

Gas Process for Burning Lime.

Four and three-quarter pounds of lime to one
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secured every day.

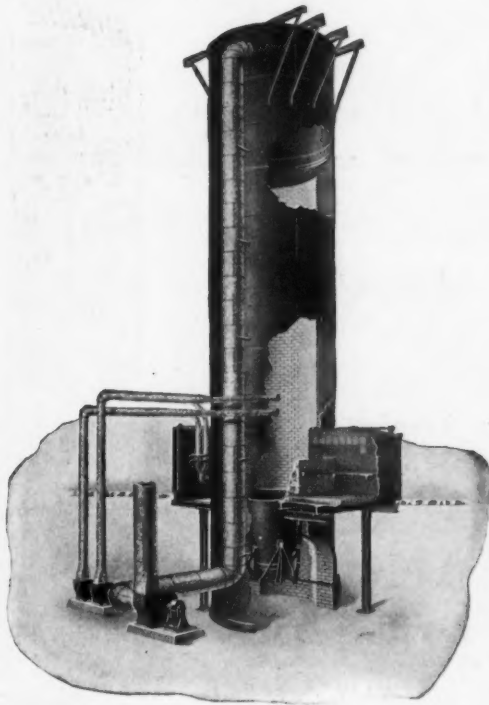
Does that look like economy to you?

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We are prepared to design and install complete lime burning plants, including all the machinery and apparatus for handling the lime from the quarry to the finished product ready for shipment.

We are the only company in the field offering this complete service, with the centralized, unit responsibility it implies.

Our line of kilns, whether coal fired, producer fired, or oil fired, assures the user "more and better lime at less cost," as a result of our long experience as Combustion Engineers.

Bulletin No. 4, "Lime Kilns and Lime Burning Equipment," is a text-book on lime burning economy.

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SCHMATOLLA, NEW YORK

This design demonstrates how to save fuel and labor in building and operating lime kilns. The upper figure shows a lime plant newly designed for a daily output of between 50 and 100 tons burnt lime.

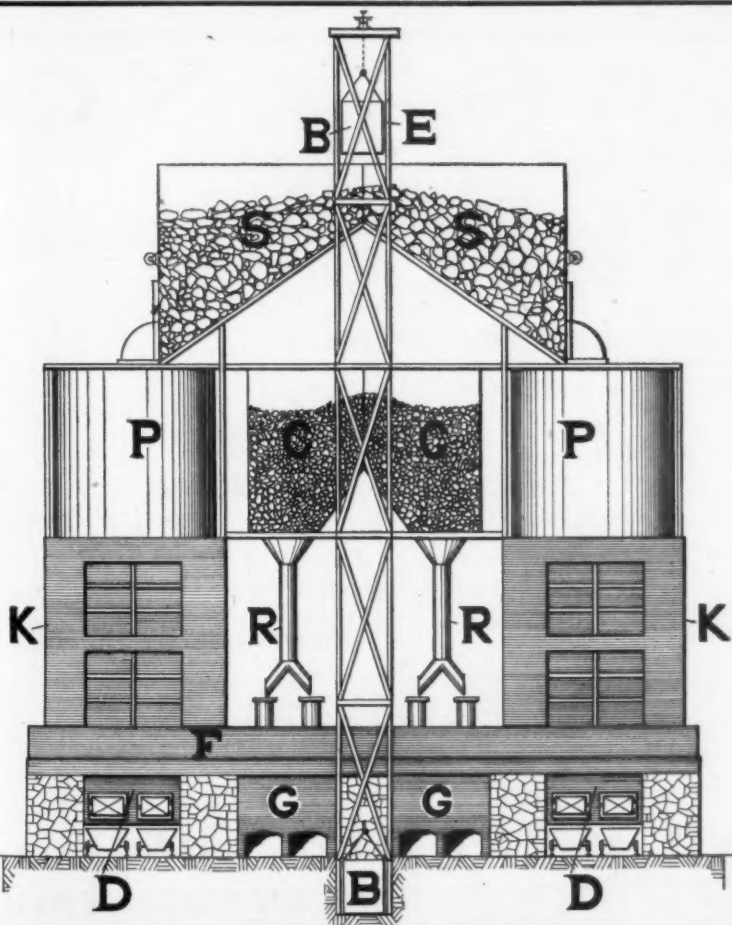
Coal consumption for 100 tons burnt lime: Between 15 and 18 tons (bituminous) coal, or about 20 tons slack—**Natural Draft** (no steam, no blower).—**Labor.** If the limestone comes direct from the quarry into the hoppers S, and the coal is dumped direct from the railroad car into the coal hoppers C, for each shift and both kilns together.

1. One fireman and one helper for feeding the producers, removing the clinkers and feeding the kilns with stone.

2. One man continuously drawing the burnt lime (which comes out of the coolers completely cool).

If an elevator must be used for hoisting the stone and the coal, one or two more men have to be employed, daytime. As Fig. 1 shows, the stone is dumped into a box B, which is hoisted above the stone hoppers S, and discharged automatically. The coal is filled in the same manner into the hoppers C, from where it is fed to the producer through chutes B.

The letter P marks the Preheater; the letter K the part of the kilns which contain the burning or combustion zone of the kiln, and the letter F the gas-flues which connect the producers G with the kilns K.



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Amatite ROOFING

It has a rough surface of real mineral matter on the weather side. It is evident to anyone that it is no more necessary to paint such a surface than it is necessary to paint a stone wall. Stone needs no paint; neither does Amatite. It is strong enough in itself to bear the brunt of rain and wind and sun without a coat of paint.

To paint Amatite would be a waste of time and trouble.

Amatite will last for many years without any care whatever. It is made to be trouble proof as well as weather proof.

No paint is good enough to make a durable roof; a thick layer of pitch, faced with a real mineral surface, is far better—and that means Amatite.

Further information will be sent on request to nearest office.



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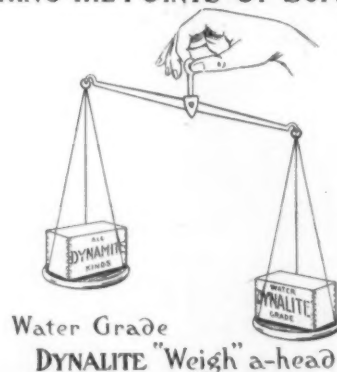
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WEIGHING THE POINTS OF SUPERIORITY



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Water Grade—No Thawing.

Manufactured by

The American Dynalite Co.

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Magazines: Ottawa, Ill.; Akron, O.; Findlay, O., and others

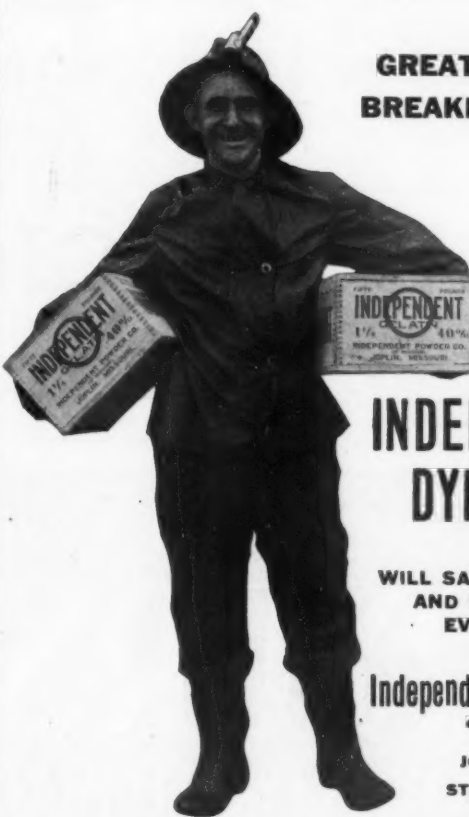
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BREAKING POWER**

**IS WHAT YOU
WANT**



**INDEPENDENT
DYNAMITE**

**WILL SAVE YOU MONEY
AND PLEASE YOU
EVERY TIME**

Independent Powder Co.
of Missouri

**JOPLIN, MO.
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MAGAZINES AT ALL IMPORTANT POINTS

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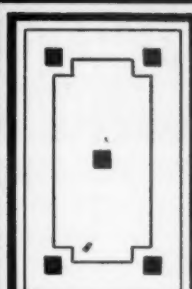
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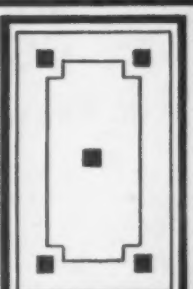
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Established 1802 WILMINGTON, DEL., U. S. A.



AETNA



AETNA L. F.

A low freezing dynamite
Hard to freeze; when frozen, thaws easily and quickly
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Aetna reliability and uniformity is fully retained in this brand

MADE IN ALL GRADES FROM 25% TO 60%

THE AETNA POWDER COMPANY
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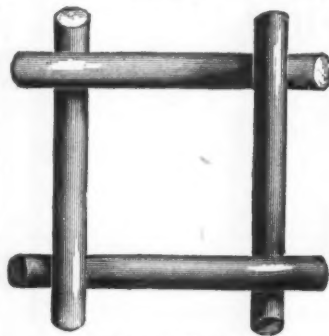
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Manufacturers of

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Tops, Fire Brick, Grate Tile, Ground
Fire Clay, Wall Coping, Etc.

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GLASS SAND
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FOR IMMEDIATE SHIPMENT NEW AND REBUILT MACHINERY FOR CONTRACTORS AND QUARRY EQUIPMENT.

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HEADQUARTERS FOR Concrete Mixers, Wheelbarrows, Gasoline Engines,
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Excellent Results, Moderate in Cost and Expense of Operation

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(FIRST MANUFACTURER OF ROTARY FIRE DRYING MACHINES IN THE U. S.)

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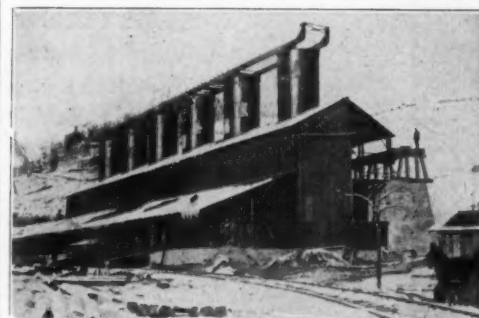
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Canoe Creek, Pa.

Designed by

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ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume X.

CHICAGO, FEBRUARY 22, 1911.

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Communications on subjects of interest to any branch of the stone industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....\$1.00
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Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

The Cement Show season is practically over. We are now ready to start in with the spring construction work. Let us hope that the lessons learned at the various conventions and shows will have a good effect on the work that is to be done and that there will be fewer mistakes to record throughout the year, as a result of these conventions and shows. If the cement user does not profit thereby then much of the benefit of the show is lost.

The National Builders' Supply Association, which closes its twelfth annual convention at the Congress Hotel Annex, has been a great power for good. The papers and discussions brought out many vitally interesting views and showed that the men who have the destiny of the organization in hand are working along the right lines. They are getting at the heart of things and the results will be far reaching in their effect. While the attendance was greater on this occasion than at any previous convention, still there is room for great improvement in this direction. There is no good reason why every retailer in this broad land should not be willing to give his time and money, if need be, towards the furthering of this organization. The good that has been accomplished cannot be measured in dollars, nor is it possible to measure it in words. The present prosperity of the builders' supply retailers in this country is due, in a large measure, to the effect of the state and national organizations. That there is still much to be accomplished goes without saying. Conditions have been so materially improved, however, that those who have the affairs of the association in hand are sanguine of still further improvement, and there is every indication that this improvement will be forthcoming during the year 1911.

Much of the work which has been done is along the lines of educating the general public. In one way, it is a good idea and in another a bad one. In order to encourage the use of cement in construction work, it is necessary to begin at the bottom and work up. In this case, it is necessary to educate the general public, but this education is not intended to go so far as to encourage the actual work by the man who goes to the show unless he is a qualified contractor or engineer. Concrete in the hands of intelligent men is a safe and sound proposition, but there are few people who can

do a good concrete job the first time they try. All this brings us up to whether the enormous amount of money being spent to educate the farmer in the use of cement is money well spent or not. If it is designed to educate the farmer up to a point of encouraging him to use it and then have him call in an experienced architect or contractor to do the actual work, then we believe that this campaign of education will result in much good, but on the other hand, if the farmer becomes so thoroughly convinced, after reading some of the literature and viewing the finished product, as to believe that he can do the work himself, then we believe that considerable harm might be done. There are many simple yet useful things which the farmer can do with cement on the farm, but as for trying to encourage the actual construction of buildings, barns, silos and other construction work, which require a thorough knowledge not only of contracting and engineering but of the actual values of concrete we think it is a mistake.

Fire waste is the greatest drain upon the net increase of wealth created by human labor. This fact and the corollary conditions that surround the problem are becoming better known by thinking people, day by day. In this country, fire waste almost amounts to a contagious disease in the method of its universal tendency to spread. The one-time tremendous timber resources of American forests have been the cause of this peculiar American distemper. We have come by absorption to consider that any kind of a shelter is all-sufficient, regardless of the costs of maintenance, and the dangers to property loss, as well as jeopardy of human life, always present. The short-sighted commercialism of timber interests is one of the monumental follies of this period, which will become potent and clear to all as soon as we can get outside of the present surroundings and see clearly from another point of observation just what is going on now, and the conditions of which we are individually a part. The pendulum always swings from one extreme to the other. When remedies for fire waste are called for in structural materials, it is customary to discuss at once the melting point of metals so rare that they are worth more than gold, pound for pound. The calculated maximum heats of great and very exceptional conflagrations are solely considered. The world's supply of refractory materials to meet such calculations is quite inadequate; then, again, the tremendous cost of the preparation of this class of materials is prohibitive, even if the supply suggested a possibility. Let us look at this matter sanely and with the ordinary business judgment that an intelligent man would employ in any every-day transaction. The world's supply of cheap incombustible materials amounts to about 25,000 times the volume of all the combustible material assets of the earth. Provided that construction and improvements of every character employed only selections from the long list of incombustibles, where would the fire waste be found? It would be completely eliminated, even though the incombustible materials employed might of themselves be vulnerable to damage by fire at low temperatures, as in the case of common brick, terra cotta, etc. The impossibility of commencing a fire of even small proportions is the condition most desirable to attain, and this is easily and cheaply done. It is altogether practicable, and the one feasible way to eliminate the awful fire waste. The greatest of all lessons to the public, and particularly those who are interested in building exemplified at the great Chicago Cement Show, just closed, is that concrete made of Portland cement and suitable incombustible aggregates can be cheaply applied to every construction purpose, and it is at once the most available fire resistant, and the most widely adaptable material obtainable in the markets. In fact, the commodities made of cement on exhibition at the Cement Show clearly indicate that every particular need has been taken care of, and cement can be had in practically every useful form, ready made for the consumer.

EDITORIAL CHAT

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TRIBUTE TO THE MEMORY OF HARRISON EVERETT ASHLEY.

By Prof. A. V. Bleining.

The American clay working fraternity has suffered a great loss in the death of Harrison Everett Ashley which occurred February 4, at Pittsburg, due to meningitis, following two operations for mastoid abscess. He was taken away in the midst of his labors from the work which he loved so well. His death was a great shock to his many personal friends as well as to all clay workers concerned in the welfare of the industry and its higher development.

Harrison Everett Ashley was born at New Bedford, Mass., August 2, 1876, of good Puritan ancestry, the son of A. Davis and Caroline Morse Ashley. As a child he was studious and always eager to get at the bottom of things. He was educated in the public and high school of New Bedford and later attended the Massachusetts Institute of Technology, taking the course in chemical engineering. At the institute he was a close student and exceedingly thorough in all he did. He was graduated in 1900 with the degree of S. B. in chemical engineering. Mr. Ashley, during his college course, had specialized in metallurgy and consequently took up the technology of foundry metal and steel after leaving the institute. He held several positions in steel plants and foundries, but meanwhile became exceedingly interested in silicates, with special reference to slags and clays. Upon corresponding with Professor Orton, he was advised to secure a practical position. This he did, and entered the employ of the Homer Laughlin China Company, at East Liverpool, Ohio. Realizing the advisability of securing special training in this line, he then took a special course in ceramics at the Ohio State University under Professor Orton. During his stay at the university he was honored by the election to Sigma Xi, an honorary scientific fraternity. After completing this work Mr. Ashley returned to his position at East Liverpool, where he was placed in charge of the kiln work, and later of all the raw materials. After the construction of the great pottery plant at Newell, W. Va., the company transferred him to the latter place, where he tested all the materials used and had charge of the purchasing department of this large concern.

In 1908 he received the appointment as assistant ceramic chemist with the Technologic Branch of the U. S. Geological Survey, and in 1910, upon the transfer of the work to the Bureau of Standards, he was promoted to be associate chemist. In this field he enjoyed the opportunities offered to the utmost and worked unceasingly in developing new principles. He realized promptly the value of modern research in regard to colloidal chemistry and proceeded to study the clays and their properties from this standpoint. He was successful in developing new lines of thought which he applied not only to clays, but



THE LATE HARRISON EVERETT ASHLEY.

also to lime hydrate, metallurgical slimes, and other substances.

Mr. Ashley contributed freely to technical literature and he has written articles and papers upon the following subjects: The study of tellurium alloys; the use of the triaxial diagram in the thermal study of slags; a suggested method of studying the gas engine cycle by means of a logarithmic triaxial diagram; the production of lustre effects on glass; the effect of various lime compounds in a white ware body; the diagrammatic study of glazes as regards their crazing and shivering limits; the testing of pottery materials; a testing method for pottery plaster; the colloidal content of clays; the control of the colloids in clay; the precipitation of metallurgical slimes and a number of other papers.

Harrison Everett Ashley represented the highest type of mankind; he was of an exceedingly kind and genial nature, full of the old-fashioned Yankee humor, of absolute and fearless integrity, unselfish in his labors, always ready to help another and most important of all, a sincere Christian.

He met death bravely and his lips uttered no complaint, though conscious until his spirit departed. His last words were of cheer to his loved ones.

Mr. Ashley is mourned by a widow and a young child, his parents and brothers. His death has destroyed an ideal and happy union of four years duration, he having been married to Miss Eva Susan



JOHN W. BUDD, DES MOINES, IA., PRESIDENT IOWA CEMENT USERS' ASSOCIATION.

Greenmyer, of Leetonia, Ohio, on July 3, 1906.

Those that knew him mourn the good man, the loyal friend, the able investigator and scientist, the unselfish worker, the devout Christian. His memory will continue to live with us.

[Mr. Ashley's splendid work in connection with the lime investigations of the Bureau of Standards, together with the patience and kindness that were always a part of his character have endeared his memory to many of our readers. With them we joint in the sentiments so well expressed by his companion, Prof. Bleining.—Ed. Rock Products.]

JOHN W. BUDD.

John W. Budd, who was re-elected president of the Iowa Cement Users' Association, is one of the most prominent engineers of Des Moines. He has a quiet, retiring disposition but withal forceful. He has had charge of some of the largest engineering projects in his time, and is at present engaged in the construction of one of the largest reinforced concrete bridges ever built in the west, at Des Moines.

Speaking of the outlook for 1911, P. J. Mayer, manager cement department, Hydraulic Pressed Brick Company, stated that business had opened up wonderfully well and predicted its continuance at least for many months to come. Continuing, Mr. Mayer stated that the Hydraulic Pressed Brick Company had furnished cement for the Wright building, Dayton building, Schubert theater, Wyman Partridge & Company's building, and the Northwestern Knitting Works' new factory building during the year 1910, 35,000 barrels Chicago AA Portland cement in all being used.

J. G. Trainor, sales manager, and W. H. Poole, general manager of the Riverside Portland Cement Co., Riverside, Cal., spent several days in Chicago, mixing up with the confreres in the cement game as well. Mr. Poole made it his especial business to look over new methods and buy some new machinery while East, to increase their capacity from three thousand to five thousand barrels daily. They were enthusiastic about the cement show and enjoyed mixing with the various cement manufacturers from all parts of the country. Speaking of cement conditions on the coast, Mr. Trainor reported a very good volume for 1910 and said they anticipated an increase on the coast during 1911. This company also are factors in the crushed stone trade, and road making on the coast is one of the attractive lines.

H. C. McCord, president, and Peter Palmer, secretary, of the Nebraska Cement Users' Association, arrived yesterday and took in the Cement Show. They have signed a contract with the Commercial Club of Omaha, taking the Auditorium for the Mid-West Cement Exposition seven days, from the 5th to the 11th, inclusive, of February, 1912.

Ben Williams and J. Henley, of the American Plaster Manufacturing Co., Lawrence, Kansas, were in attendance at the various meetings going on this week, and speaking of business conditions, reported a good outlook. The Sunflower City, which is their headquarters, is not going backward, and their plants in various parts of the country are having a fair run of orders.

N. R. Mackemer, of J. W. Mackemer & Co., of Peoria, Ill., who wholesales lumber and handles building materials, says the prospects of the concrete division of the trade looks good. His concern has taken the lead in attending to concrete contractors' wants for several years past.

Mrs. E. M. Barrett of Austin, Texas, is probably the only woman actively engaged in concrete construction. She is making a success of the work and continues to stick to it. Mrs. Barrett was a recent enthusiastic visitor at the Cement Show and expressed her admiration for the different exhibits.

E. F. Beazley, of Stanford, Ky., with the Lincoln Construction Company, will remain in Chicago for a couple of days, posting himself on the new things on exhibit at the different booths at the show. All the turnpikes in Lincoln County are taken care of by him, and he furnishes all the crushed rock used by contractors in that county.

Edward E. Buhler, of the Edward E. Buhler Co., one of the largest retailers of builders' supplies of New York City, passed through Chicago early in the month. He called at the Rock Products office to pay his respects. During the course of the conversation he stated: "You have got a good paper and I want to congratulate you on the way you made things go when in New York."

TWO HUNDRED FEET LIMIT FOR CHICAGO SKYSCRAPERS.

After several months of practically useless bickering on amendments to Chicago's building ordinance the city council last week passed an amendment to go into effect September 1, this year, limiting the height of buildings in Chicago to 200 feet instead of 260, as had formerly been the limit.

There was plenty of opposition to the measure to limit the height of buildings to 200 feet but at this last meeting of the council it was of no avail. The delay in passing the amendment to the old ordinance has in some respects held back building operations in the city and in other respects has furthered the same. Builders who were drawing plans for structures to be over 200 feet in height hastened their plans to get them filed under the old ordinance. Several minor changes in the code caused a delay among the smaller builders because they could not risk the chance of perfecting plans and having them rendered useless by a passed measure prohibiting certain details in construction.

At the present time in Chicago there are more proposed buildings than ever before, fully a dozen large skyscrapers, to be over 200 feet in height, and many smaller building plans are in the hands of architects; and when they are given out, which time will be in the near future, it will cause a boom in the different lines of building supplies.

An argument advanced by several members of the city council of Chicago was that property values in the "loop" would decrease millions of dollars if the 200-foot limit went into effect, also the fact that light and air are better in the higher buildings than in smaller ones. These arguments were ruled out and the amendment was passed by a majority vote, to become effective September 1, 1911.

DEATH OF J. V. GODFREY.

J. V. Godfrey, Moorhead, Minn., a prominent contractor and cement man, died January 20 at his home after a brief illness of something less than a week. Pleuro-pneumonia was the cause of death, and the suddenness with which he was stricken adds to the already great sorrow of his relatives and many friends. Mr. Godfrey was well known in the northwest, a prominent Mason, and among other association offices held by him he was vice-president of the Northwestern Cement Products Association.

THE WINDOW DISPLAY MANUAL.

The American Artisan and Hardware Record, Chicago, has just issued a book entitled "The Window Display Manual." They say of it:

"For a number of years The American Artisan and Hardware Record has been conducting hardware window display competitions, offering each time \$100.00 in cash prizes for photographs of business-getting hardware window displays with descriptions thereof. These competitions have stimulated the hardware merchants to put forward their best efforts to devise the most effective displays which their ability will permit, and many of these are shown in this Manual, having previously appeared in The American Artisan and Hardware Record. Repeated requests from the hardware trade have induced us to publish them in book form. Their value and merit as business getters have been demonstrated by those dealers who are responsible for their creation.

The book retails for \$3.50.

The Sales Managers' Association of America is an organization made up of the captains of the firing line of the industries which operate through the medium of an organized sales force. Their first annual convention was held in Chicago in August, where the association took definite shape by the election of the following officers: C. A. S. Howlett, Schenectady, N. Y., president; R. E. Rose, New York, N. Y., first vice president; A. C. Secrist, Cincinnati, Ohio, second vice president; W. O. Washburn, St. Paul, Minn., third vice president; Bentley P. Neff, Duluth, Minn., treasurer, and J. C. Van Doorn, Minneapolis, Minn., secretary.

The territory of the country was divided into districts and the work of the association completed with great enthusiasm, and the organization has gone to work to "earn dividends on increased efficiency."

J. C. Van Doorn, secretary of the association, is well known as the northwestern sales manager of the Universal Portland Cement Company. Van has always been a hustler in his special line and knows how to work in organized lines.

Steve M. Wright, of the Wright Lime and Cement Company, of Memphis, Tenn., was a recent Chicago



F. B. JONES, TOLEDO, O., PRESIDENT OF THE OHIO BUILDERS' SUPPLY ASSOCIATION.

visitor. He remarked that since he moved into his new quarters his builders' supply business had been picking up steadily, and that the outlook in the thriving city of Memphis was better than at any time in the past that he could recall, and he is one of the old dealers.

W. B. Huskey, the genial sales manager of the Allis-Chalmers Company, who keeps shop, when he happens to be at home, in the Schofield building, Cleveland, has favored our sanctum with his countenance. We are reproducing the same on this page because so many of the readers of ROCK PRODUCTS are familiar with Bill Huskey, the jokes that he tells as well as the crushers that he sells. Whenever there is anybody who wants to solve some difficult problem in the crushing, rehandling or reclaiming game, he is a necessary factor to take into consideration. Once in a while, when the stone men have a meeting, he gets to be a ladies' man and gives box parties. It is all the same whether he has on a pair of opera pumps, dress suit and wears an opera hat, there is no place you can lose him, and they do say that his box party jokes are just as catchy as those he tells on the incline in front of a crusher.



W. B. HUSKEY, CLEVELAND MANAGER, ALLIS-CHALMERS CO., CLEVELAND, O.

FRANK B. JONES.

F. B. Jones, who was elected president of the Ohio Builders' Supply Association at their recent convention, held at Columbus, is well known to the retailers of that state. He is an ardent association worker, a man of great initiative and one who will preside with strength and dignity. He has splendid ideas on association work, and when he accepted the presidency he promised that he would double the membership in one year, if they would but give him the same support that they had tendered to the other officers in the past. It is safe to say that the Ohio Builders' Supply Association will thrive and prosper under the able guidance of Mr. Jones.

Mr. Jones started a coal and builders' supply yard at Toledo, under the name of "The Acme Coal, Wood and Builders' Supply Company," seven years ago. The name of this company has since been changed to the Acme Coal and Builders' Supply Company. During this period, they have built up a business that is profitable, regardless of the keen competition which is to be found in the city of Toledo, as there are six builders' supply concerns there at the present time.

One of the objects of the state association is to bring harmony out of chaos in the individual cities, and Toledo is one of the cities where the state association has done very good work.

Mr. Jones, in speaking of his election to the presidency of the Ohio Builders' Supply Association, said: "I trust that every member of the organization will co-operate with all the officers of the same for the next year and see if we cannot have an organization that is worthy of every builders' supply man's support in the state of Ohio, both large and small."

The committee on ways and means, and also the executive committee, met in Columbus on the 10th of February to formulate some plan to increase the membership of the organization and also to benefit the dealers in the state of Ohio, and we sincerely hope that ROCK PRODUCTS will give us their support as far as possible for the benefit of the organization.

O. U. Miracle, formerly one of the largest manufacturers of concrete machinery in the country, but now a prominent contractor in the West, was in Chicago last week. Mr. Miracle and his cousin, Ralph Miracle, have been engaged in some large contracting and engineering projects in Montana and other Western cities, and have made a signal success.

The Power & Mining Machinery Company announce the removal of their Chicago office from the First National Bank Building to room 825, Old Colony Building, corner Dearborn and Van Buren streets. Mr. L. J. Hewes, the district manager, extends greetings to his friends and trusts they will call to see him in his new office.

N. B. Phelps, 405 Sheldon Building, San Francisco, Cal., has been appointed representative of the Atlas Car & Mfg. Co., Cleveland, Ohio, which manufactures brick cars, mine cars, electric cars, electric locomotives, etc.

Mr. N. E. Calkins, president and general manager of the Cayuga Lake Cement Co., Ithaca, N. Y., in a recent communication, had the following very pertinent remarks to make on the present situation:

"Regarding the cement situation in this locality, would state that the business for the present year promises to be a normal one, and there is every indication to lead us to believe that the consumption of cement for the present year will show fully the same increase that the past year did over 1909, and we believe that all manufacturers will be able to market their normal output during the year without any trouble and we believe it unwise for the manufacturers to go into any cut in price, as the question of price will not enter into the consumption of cement during the present year, at least, as there will be just as much cement used, even though the price was 20 cents per barrel more than it is today, and everything promises to be a good year with us."

Philip J. Johnson, of the John A. Denie's Sons Company, of Memphis, Tenn., who are large manufacturers and jobbers of lime, cement, etc., said he had to come up here on a flying trip, not finding it in his heart to stay away from this great Cement Show in the Coliseum.

F. P. WILSON.

F. P. Wilson, city engineer of Mason City, Iowa, has probably done more to popularize cement streets than any one man in this country. There have been streets without number laid previous to Mr. Wilson's engaging in the undertaking, but in one instance they were too costly and not any better than Mr. Wilson's, and in another instance they were not constructed properly. Isolated instances of successful cement streets are in existence, but not on a very large scale. It remained for Mr. Wilson to provide plans and specifications for the guidance of Mason City, which resulted in the first really successful streets in which concrete was used throughout, and in each the cost of production was held down to a minimum.

Mr. Wilson was born at Afton, Ia., and is now in his forty-second year. He was educated in the public schools of Creston, Ia., and afterwards went to West Point United States Military Academy. When he left West Point he entered the employ of the C. & B. & Q. Railway Co. in its civil engineering department, remaining there for the next eight years. In 1896 he entered the bridge engineering department of the Great Northern Railway Co. at St. Paul, and was with this company until 1899, when he became city engineer of Mason City, Ia., which position he has occupied ever since.

SEES PROSPERITY AHEAD.

H. E. Wilson, the general manager of the Cement Products Co., Wilson, Okla., writes the following letter:

"I read articles occasionally about the coming hard times and the prediction of a dull year for 1911, in what would appear uninformed journals.

"For thirty-five years I have been able to understand something of the trend of the times and have, during this entire period, heard people talk of 'hard times' year in and year out, and yet the world has progressed all the time. The United States, from the north to the south, the east to the west, have developed and become greater and more powerful and wealthy, and no special calamity has befallen the country. I still read newspapers and magazines and hear people discuss events and make predictions, but from all that I can glean from authentic and reliable sources, the bent of the times points to favorable conditions for a strong and healthy building record and a prosperous year for the odd number 1911.

"It may be possible that our country was overbuilt and that there was unusual and great energy manifested in the projection of new industries for several years preceding and up to the panic of 1907, but for the past three years this country has had a comparative rest, money has been accumulating, and the requirements of the people are becoming such and being swelled to such proportions as to require an advance all along the line and will, despite the wailing of pessimists, move forward, carrying both the pessimistic and optimistic with it.

"The highest and most reliable authorities state that the crops for 1910 of the United States, as a whole, were the largest and of the greatest value this country ever produced in any one year. Other sources of production of real and genuine wealth, such as the various mines, lumbering, fisheries, oil and gas wells, have been active—all of which necessarily produce wealth and constitute a financial resource that will make possible and available the means and stimulation for the promotion of industries, activity in the trades and commerce, thus making necessary the extension of building and construction work generally to accommodate new conditions and demands."

BOOKS YOU SHOULD OWN.

Two very interesting and instructive booklets have recently been issued by the Marquette Cement Manufacturing Company, with offices at Chicago, Ill. One is termed, *An Industrial and Architectural Achievement*, and gives a complete technical and literary description of the newly completed Grand avenue viaduct at Milwaukee, Wis., for which 55,000 barrels of Marquette Portland cement were furnished. This project is one of the greatest concrete bridge engineering feats ever attempted and completed.

The other booklet contains 115 pages of useful information for users of cement in the country. Every possible and conceivable use to which cement can be put is described in this booklet—the different mixtures necessary for the construction and the manner in which they should be mixed. These books will be sent free to anyone in Illinois or surrounding states upon request to the Marquette Cement Manufacturing Company, Marquette Bldg., Chicago, Ill.



F. P. WILSON, C. E., CITY ENGINEER, MASON CITY, IOWA.

George S. Bartlett, of the Marquette Cement Manufacturing Co., was taken for J. H. Sunderland, the big dealer in builders' supplies at Omaha last night at the Cement Show. Mr. Bartlett said the Omaha man had him "beat a block" on looks, but A. H. Craney, Jr., of the St. Louis Portland Cement Co., evidently knowing both, said the resemblance was striking, both being handsome men.

Quite a number of Kentucky colonels have been in attendance at the show. Representatives from all the cement mills in and about the state have been on hand during the fore part of the show. Among the cement men whose familiar faces we noted were W. S. Speed and T. A. Courtney, sales manager for J. B. Speed & Co., Charles Horner and C. M. Timmons, of the Kosmos Portland Cement Company. Several prominent contractors have also been here, among them being P. S. Hudson, of the Central Concrete Construction Company.

The Empire Portland Cement Company, of Portsmouth, O., will build a \$500,000.00 plant at Menominee, Mich.



CHAS. L. JOHNSON, GENERAL SALES AGENT GREAT WESTERN PORTLAND CEMENT CO.

CEMENT COMPANY CHANGES.

Charles L. Johnson has tendered his resignation as general sales manager of the Southwestern States Portland Cement Company, of Dallas, Texas. He has accepted a position of general sales agent of the Great Western Portland Cement Company, of Kansas City. While we had come to regard Charlie as a Texas fixture, since he had made good in such a large way, still we believe that he will be more at home in Kansas City, where he was formerly located for a time.

There are few cement salesmen in the country who are as well posted on the general situation as Mr. Johnson. While old in the business, he is not old in years, and is still among the greatest hustlers of the firing line.

Mr. C. B. McVay, formerly of the Yankton Portland Cement Company and the Marquette Portland Cement Company, will succeed Mr. Johnson as general sales agent of the Southwestern States at Dallas. Mr. McVay is also well known, and his many friends throughout the country will wish him good luck in his new position.

NEW BUILDINGS RECOMMENDED.

Springfield, Ill., February 21.—New buildings at state institutions have been recommended by the Board of Administrations as follows, and, according to past custom, the majority will be allowed in the appropriations bill of the state legislature:

Hospital for Insane, Elgin—Two cottages, \$36,000.00; psychopathic laboratory and morgue, \$9,000.00; completion cottages already begun, \$27,000.00; laundry, \$33,000.00; bakery, \$16,000.00; women's building, \$25,000.00; employees' cottage, \$26,000.00.

Hospital for Insane, Kankakee—Transforming cottage into nurses' home, \$25,000.00; bathrooms, \$8,000.00; warehouse, \$10,000.00.

Hospital for Insane, Jacksonville—Male employees' quarters, \$50,000.00; kitchen, \$15,000.00.

Hospital for Insane, Anna—New kitchen and bakery, \$67,000.00; infirmary for women, \$65,000.00; employees' quarters, \$50,000.00; addition to store room, \$5,000.00.

Hospital for Insane, Watertown—Female dormitory, \$60,000.00; new building, \$50,000.00.

Hospital for Insane, Peoria—Men's dormitory, \$50,000.00; men's farm colony buildings, \$28,000.00; men's garden colony buildings, \$28,000.00; women's farm colony buildings, \$28,000.00; dairy barn, \$15,000.00.

Lincoln State School and Colony, Lincoln—Hospital for females, \$60,000.00; coal sheds, \$5,000.00.

Soldiers' and Sailors' Home, Quincy—Hospital for nervous soldiers, \$60,000.00; attendants' dormitory, \$7,000.00; hospital building, \$25,000.00.

Soldiers' Orphans' Home, Wilmington—Laundry building.

School for Girls, Geneva—Two cottages, \$75,000.00.

School for Boys, St. Charles—Kitchen, \$25,000.00; laundry, \$8,000.00; remodeling farm houses, \$12,000.00; cottage, \$25,000.00.

The State Board of Administration recommends to the legislature the expenditure of \$4,000.00 for tiling floors in buildings at the State Colony at Lincoln.

The State Board of Administration has recommended \$1,500.00 for new concrete floors at the Home for the Blind at Jacksonville, and \$400.00 to be added to a former appropriation of \$1,000.00 for concrete floor at the Soldiers' Orphans' Home at Wilmington.

PETITION IN BANKRUPTCY.

A petition in bankruptcy has been filed against the R. H. Mathews Company, dealers in building supplies, New York City. The company was incorporated in 1906 with a capital of \$30,000.00. The liabilities are \$80,000.00 and the assets \$3,000.00 now, it is reported.

The Yost Brick & Stone Company has been incorporated at Indianapolis, Ind., with a capital stock of \$25,000.00. The incorporators were C. T. Yost, S. T. Rawis and C. Hall.

The Speakes Lime & Cement Company has been incorporated at Duluth, Minn., with a capital stock of \$10,000.00. The incorporators are H. E. Speakes, W. H. Steele and L. Munro. The company will locate in Superior.

The T. R. Mills Lime & Brick Company has been incorporated at Little Rock, Ark., with a capital stock of \$90,000.00.

NATIONAL BUILDERS' SUPPLY RETAILERS

Hold Twelfth Annual Convention in Chicago — Largest and Most Enthusiastic Meeting ever held. Business and Good Fellowship Happily B ended.

The great annual conclave of the builders' supply interests of the United States is holding forth at the Congress Hotel. The meetings are being held in the Gold room, while the lobbies are filled with the representatives of the manufacturing interests, dealers and camp followers. It is a jovial host of successful business men who make it a point to meet together annually to map out the business campaign for the coming year. On every hand one meets the expression of prosperity, for the building season of 1911 is one fraught with good omens.

Every detail of the arrangements for the great meeting has been carefully carried out and it is to be noted that the efficiency of every number of the program makes it pleasant for the delegates to participate in the meeting.

President Chas. Warner, Wilmington, Del., gracefully fills the chair, while the thorough going and persistent secretary-treasurer, James W. Wardrop, of Pittsburgh, takes care of all the details of the convention. The attendance is somewhat larger than usual and the old familiar faces of the association predominate, while there is quite a sprinkling of new members who have only recently gone into business and joined the association.

The reports that were read Tuesday morning clearly indicated that the association is appreciated by its members and is liberally supported for the good that it has accomplished, is accomplishing and is sure to work out in the future. This expresses confidence on the part of the membership in the officers who are carrying the association's standard on the path of progress.

PRESIDENT'S ANNUAL REPORT.

(By President Charles Warner.)

Fellow Members and Friends: This occasion of our annual gathering is one that we look forward to with a great deal of pleasure, due not only to the social features that attend these national meetings, but also to the great amount of good that we are able to secure in our self-education on the lines of business so interesting to us.

I wish to take this opportunity to express my deep appreciation of the honor conferred upon me last year at your annual convention in your selection for president. Unfortunately I was called home before our last annual convention had barely started because of urgent matters that developed and, therefore, had not the opportunity, following your selection of president, to speak to you in this personal sense and of appreciation for the confidence bestowed.

As promptly after last year's convention as possible our energetic secretary and myself spent some time together in analyzing the conditions existing and planning the best policy to pursue in behalf of this important organization. We conferred fully by correspondence with our executive committee and kept in monthly touch with the committee on important matters as they developed throughout the year.

Our plans as mapped out last spring for further and aggressive work were fully concurred in by every member of our national committee and our efforts throughout the year have been on the lines so laid down. The nature, extent and results from this work will be hereinafter outlined.

The general business conditions all over the country have, of course, affected the association's enlargement as they have the growth of our individual businesses in most cases. Unfortunately the general uncertainty as viewed by the business men of this country regarding the commercial outlook, due largely to awaiting the decisions of the Supreme Court of the United States in certain important cases and the probable line of action to be pursued by the Interstate Commerce Commission, caused a general feeling of unsettlement and a period of more or less business inactivity during the year 1910 just passed.

While many of these important matters are still unsettled as affecting the general business conditions in this country, I am glad to report that from my own personal observations at least the mental viewpoint of most of the business and financial men of this country with whom I have been in contact during the last month and a half has materially changed and is radically different from the views taken by most of these men during 1910.

It is certain that those men who are best qualified to judge of the possible results of the unfavorable decisions now feel that the conditions have been quite fully discounted, and that we face during 1911 a steady improvement and increase in the volume of trade and in the general activities of business in this country.

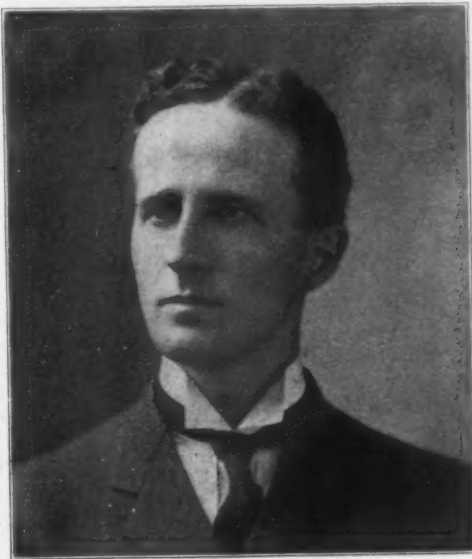
After all is said and done the largest consideration of all is the fact that this country of ours has such tremendous resources, both above and below the ground, with such large numbers of resourceful men to meet any emergency that is likely to arise in handling the business affairs of the country that it is quite unnecessary for any condition to seriously or materially affect our commercial welfare for a considerable length of time. Therefore I am led to the conclusion that most of our business depressions are due to a mental attitude that many of us periodically assume in unison assume throughout the country, which grows and re-

cedes in waves and makes for good or bad business.

The mental attitude of a majority of business and financial men unquestionably favors the uplift of business from now on for some time to come and this will naturally be the result.

To return to our association and its important work, we will first take up the question of the general policy and efforts made on those lines by our secretary in co-operation with your various officers. Following the plans approved of shortly after the last convention by the new executive committee, we proceeded to work both by correspondence and in the field at many points as the necessities and opportunities presented. We took up the local conditions at several centers to see wherein the national effort could be applied to facilitate the improvement to dealers at such points by endeavoring to secure greater interest in the local organization already formed or to inspire the formation of other organizations in districts where they were badly needed. The details covering the important features of this work from month to month throughout the past year will appear in our secretary's report and will not, therefore, be incorporated here.

This work of our secretary also included the important development of state affiliations where state organizations already existed for the purpose of increasing the influence with and through the national organization. Decided progress has been made on these lines, but the delays naturally attendant in the consideration and action on matters of the kind in state associations, where annual meetings often have to be



CHARLES WARNER, WILMINGTON, DEL.,
RE-ELECTED PRESIDENT.

awaited, makes progress slow. It is, however, gratifying to know that the work so far done is decidedly affirmative in its results.

While on the question of affiliations I also wish to touch on the broader work we have been pursuing in seeking affiliations with other associations, such as the Lumbermen's Association, working in some respects and in the same districts somewhat parallel to our own organization, and in the development of broader affiliations with other building supply producers, such as represented by the brick and clay industries.

We must bear in mind that it is to the interest of our membership to progress in all of these lines and to build the closest possible alliances with other large producing industries manufacturing builders' supply materials which can and should be handled at a profit by most members of our organization. Such work all makes for the improvement in the conditions and earnings of the aggressive dealers.

The problem of increasing our membership is an important one, as it naturally bears on the strength and representation which our organization presents to the trades, and also is of great moment in connection with our financial requirements.

Our secretary's report will indicate the subtractions from and additions to the membership for the current year just past. The net result is an increase of sixty-three members. This, on the face of it, appears small in connection with the extensive work done during the past year, but when we stop to consider the many calls made upon the dealers throughout the country in connection with local associations and some from state associations, and considering the natural feeling on the part of the smaller dealers, who consider that their conditions are more local than national, without a realization on their part of the national conditions which cannot but affect their local work, I believe that we can justly consider that we have marked reasonable progress in this particular field.

It is largely a question of continuing aggressive work, of educating the dealer to a clearer and more definite understanding of the benefits accruing to him individually from a growing national organization, and by bringing national influence and efforts to his local town or district, thereby proving to him definitely the assistance that can be rendered by our organization.

It will require patience to accomplish the end we are aiming for, and it will require money and confidence on our part, that the ultimate end will justify the effort we are putting forth in this great work. This leads us directly to the financial needs of the case in hand.

An analysis of our treasurer's report shows that conducting our organization as now handled in the aggressive manner pursued through most of the current year of 1910 requires an annual expenditure covering all expenses of a shade under \$10,000.

Our present membership of 353 members at an annual due of \$24 each contributes about \$8,700. Your executive committee considered in mapping out their policy about a year ago that the aggressive continuation of our work on the lines pursued during most of the year 1910 should add sufficiently to our membership to place the association on a definite self-supporting basis at the time of this convention.

Knowing that the association must be a success on one line if not on another, the members of the committee have individually advanced a material sum of money as will be shown in the treasurer's report, for the purpose of meeting the temporary deficiencies during 1910.

As indicated, the membership has not yet been brought to a number sufficient to meet all of the running expenses now necessary in the conduct of this work along its present lines. It seems such a simple matter for each active member of the association, totaling 240 dealers, to guarantee that they will each add one new member within thirty days of this convention, thereby doubling our income and tripling our ability to do good, that your executive committee hesitates to recommend the other alternative of reducing our working basis to one much less able and less aggressive in behalf of the dealers of this country. But if the members of this association are not ready to do their part on such a line as indicated, or in some similar manner to assure an increase for 1911 well in excess of \$10,000, the present executive committee will consider it essential to recommend to the incoming committee a retrenchment along the lines indicated.

This issue is clearly presented here and requires very careful consideration on the part of this convention. I would personally consider it a serious misfortune if this convention takes no action to place the members individually back of the incoming executive committee in such a manner as to definitely assure an income of several thousand dollars in excess of the present annual expenses.

We, of course, realize that the continuation of our work as now being pursued will unquestionably add considerably to our membership during 1911, but the extent to which it will add is problematical, and it will be working an unjust hardship on the incoming committee which will seriously affect its efficiency in your behalf if it is not backed up financially by the active members of this association.

In closing, I wish to urge that each of you, for the good of the cause, participate in the consideration of the important papers to be read at these sessions today and tomorrow, as it is only by the fullest possible consideration and light that may be presented on these questions that we may hope to arrive at the highest degree of efficiency in conducting our business.

If every member present will now resolve to personally contribute from his thought and experience upon the questions raised, we stand ready to guarantee that he personally will get benefit far in excess in any cost of attendance.

SECRETARY'S ANNUAL REPORT

(By Secretary James W. Wardrop.)

Mr. President and Gentlemen of the National Builders' Supply Association: Your secretary respectfully presents the following report for your approval:

TRAVEL.

Since the last convention I have visited the following cities: New York City, Newark, N. J.; Wilmington, Del.; Philadelphia, Pa.; Detroit, Mich.; Toledo, Ohio; Washington, D. C.; Cleveland, Ohio; Chicago, Ill., and again in the present convention. In all these visits we conferred with the members of our association and presented the work to prospects.

The Newark, N. J., visit was in company with our worthy president and had to do with the affiliation of the New Jersey State Association.

At Detroit our mission was the local organization of the dealers of that city and the securing of members for the National Association.

At Toledo we attended the convention of the Retail Coal Dealers of Michigan, Indiana and Ohio, and were present at the formation of the Tri-State Association.

Some time was spent at New York City visiting the dealers there and we secured the applications of the leading dealers of the city, as will be referred to later in the presentation of new members.

At Washington, D. C., we met with the local dealers' association, presented the work of the national and secured two members.

At Cleveland, Ohio, we had a conference with some of the leading men in the Retail Lumber Dealers' Association work and this will be referred to later.

At Chicago we attended a conference of the Retail Lumber Dealers' Association secretaries and presented the affiliation idea.

At Indianapolis we attended the State Retail Lumber Dealers' Association convention and presented the affiliation proposition.

At New York City we appeared before the Building Trades Employers' Association annual meeting at the request of some of the members of our association.

In Chicago, February 17, we appeared before the Illinois State Association of Retail Lumber Dealers, again presenting the idea of affiliation.

STATE AFFILIATION.

In company with our worthy president we met with a special committee of the New Jersey State Association in March, and while that state has not come into



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the fold as a unit, they were magnanimous enough to heartily endorse the movement and agreed to stand by the proposition when other states are secured. The New Jersey State Association has an active membership of about 100 and to give the National Association the support merited they propose to increase the direct individual membership from their state to the national to a number that would practically give the National Association a per capita of \$5 on their 100 members, viz., \$500 per year to the national work, and we are pleased to report that their effort to date has resulted in a membership netting the National Association over \$300 per year, with a good prospect of reaching the total of \$500 at an early date. The New Jersey State Association's interest and influence are to be commended and we earnestly trust that other states will do likewise. That you may understand the position of the New Jersey State Association we include in this report their general letter of May 31, 1910, as follows:

"Newark, N. J., May 31, 1910.

"To All Dealers: Conditions in the mason material business have made it necessary for dealers to get together for the protection of their interests.

"This movement resulted in the organization of the National Builders' Supply Association, the New Jersey Mason Material Dealers' Association and a number of other state associations, each organization working independently of the others, but each with the same object in view—'Protection for the dealer.'

"These organizations have exerted a great influence in the trade. Manufacturers now give more thought and consideration to the rights and wishes of the dealers. The results of association effort have proven of value, because it has shown to the dealers themselves that we are organized right and working in accordance with the trend of business affairs, for co-operation is the modern method of business development and progress. The officers of the different associations realize that our influence would be immeasurably greater if organizations were formed in other states, and all working together under one plan.

"The National Builders' Supply Association, to help along the cause, has decided to assume the burden and responsibility of forming state and local associations throughout the country.

"Mr. Charles Warner, of the Charles Warner Co., Wilmington, Del., president of the National Association, is a manufacturer, wholesale dealer and a retailer. His fairness and well-known hustling business ability, also his knowledge and influence in each branch of the industry will be used in the interest of co-operative effort. Mr. Warner, although a very busy man, has probably given more of his time and done more for the dealers than any other person. He is willing to keep up this good work, and now asks the dealers of the country to help in this plan, which has for its object the direct benefit in dollars for every dealer.

"Among the members of the National Builders' Supply Association are the very largest dealers in the United States. These men are in position to undersell and take away much of the trade from the smaller dealers, but they show their fairness to the cause by asking you and all dealers, with a large or small business, to come in with them as equals, on the same basis with them, and with an equal vote. Fail to support association work and many of the big wholesale dealers would be forced to become your active competitors. These men distribute vast quantities of materials, and an alliance with them would add greatly to our strength. On the other hand, to attain the greater measure of success, they must have the support of the many average dealers.

"To promote this great work for the dealers on a national scope takes time and money. The officers of the National Association offer their services. To succeed the dealers must provide the funds.

"The work of forming state and local associations has the approval of the officers and trustees of the New Jersey Mason Material Dealers' Association, and our members are urged to help this work by joining the National Builders' Supply Association. The dues are twenty-four dollars (\$24) per year, or two dollars (\$2) per month for the remaining months of this year. We believe it is worth many times the cost, and that direct benefits will come to our own New Jersey Association and to each member. If some dealers cannot see immediate personal results we ask them to join, feeling that it is a donation to a good cause that will ultimately bring results advantageous to all.

"The leaders in our business are back of this movement, and it is now up to the dealers. We feel that New Jersey should contribute to the work, because we are to be benefited. Dealers join and help to band together your fellows from every section of our country, and we will have a trade association that will command the respect of the business world, and that will give to each of us those advantages which the standing in our business and our efforts entitle us.

"A membership application blank is enclosed herewith. We urge you to sign it and return to our New Jersey secretary. The cost is a trifle when compared with the great results that it can produce.

"Yours very truly,

"WALTER C. SHULTZ,
"AMBROSE TOMKINS,
"E. L. R. CADMUS,
"CHARLES W. ENNIS,
"HORACE S. OSBORNE,
"JOHN M. CAMPBELL,
"Committee."

"JAMES M. REILLY, Secretary,
"764 Broad Street, Newark."

Commencing in July last your secretary introduced the affiliation idea to forty states, through the Retail Lumber Dealers' Associations representing these states, and has had a large correspondence with the secretaries involved. These secretaries have admitted the advantage of the affiliation idea and are doing their best to bring about favorable results.

On December 7th and 8th, 1910, it was the privilege of your secretary to attend a conference of these secretaries in the city of Chicago and to there outline his plan. As a result of this he appeared before the Indiana State Association in January, and, after addressing the members, a special committee of that association was appointed to meet with our executive committee and to discuss state affiliation.

Your secretary was also invited to attend state conventions during the present and past month, as follows: New York, Ohio, Michigan, Illinois, Nebraska, Colorado, Wyoming, Washington and Missouri, but owing to the work incident to this convention, and the state of our treasury, he was compelled to forego the pleasure mentioned. Instead of a visit he sent to each association a formal invitation to be presented at each of these conventions and expects favorable action at the hands of the majority, in which case special committees will be

appointed to confer with our executive committee and in joint session to determine the per capita tax basis of this affiliation.

To make clear to you this affiliation work we might say that in many of the states the retail lumber dealers are already organized in state associations, also that many of these dealers carry builders' supplies. Since they are now paying dues into the State Association it is hardly to be expected that they could hold direct or individual membership in the National Association, and our effort has been directed to a plan that would spare the embarrassment of the double dues and yet give the National Association the benefit and influence of the membership of the dealers who handle builders' supplies—this to be upon a per capita tax basis to be determined later. In our work for new members we have found it rather difficult to interest the dealers under the double dues proposition. If our plan for state affiliation will work out it will very much simplify the work of the National Association and introduce what the executive committee has been aiming at for the past two years, viz., first local organization; second, the unifying of these local into state associations, and, third, the unifying of all in the National Association. This would bring the benefit and protection of the work home to every locality and to every state, and, by bringing these states together in the National Association, make one strong and influential organization. It would also work to the advantage of the state organization by securing the membership of every dealer in the state, while it would make the National Association a more representative body and give it all the funds necessary to carry on the work upon a broader and more aggressive plan.

We also presented a formal invitation for state affiliation to the Ohio Builders' Supply Association and at their recent convention in Columbus our communication was favorably received and a special committee from that organization appointed to confer with our national executive committee. Since arriving in this city the Illinois State Association has also favorably considered the proposition and appointed a committee on conference.

The only other convention that we have heard from to date is the Northwestern Lumbermen's Association, which embraces four states. Our formal communication was presented at their convention and up to the present time that association cannot see its way clear to join the movement. It may be, however, that some plan can yet



JAMES W. WARDROP, OF PITTSBURG, RE-ELECTED SECRETARY N. B. S. A.

be evolved to overcome the difficulty presented and to secure the affiliation of these four states. So that at the present time the affiliation idea stands as follows: New Jersey, Indiana, Ohio and Illinois have favorably considered the plan and have appointed special committees on conference and it is confidently expected that the result will be of material benefit to these states, to the dealers and to the National Association. It may be asked why this work has taken so much time and effort. The answer will make it apparent to all our members, namely, the plan was first submitted to the secretaries of the state associations, then it was considered by the executive committees of these states and their recommendation passed along to the association itself, and since these associations meet but once a year, and generally in January and February, it will be seen that the months of January and February of this year offered the first opportunity for action and the results are now becoming known. Some of these associations are even now in session and their action will not be known for a week or two, so that we are right up to date on the subject and hope for continued favorable returns.

It is very important that this subject receive attention at this convention, as it is up to us to lead the movement here and now, and to so direct the plan as to make it clear to our own executive committee how to proceed to secure the benefits involved.

COMPLAINTS.

During the year we have had complaints from Washington, Georgia, Ohio, Nebraska, Tennessee and Missouri. The state of Washington complaint involves a Portland cement company and a lime and cement company, and after a most careful investigation it is found that both companies are working harmoniously with the dealers and that the basis of the complaint involves the question of the right of the manufacturer to sell direct to the dealer instead of through the distributing agent. This principle, of course, cannot be endorsed by this association, as we stand for the fullest cooperation between manufacturer and dealer, and we have been compelled to compliment the two concerns on their trade ethics and

to do everything in our power to strengthen the mutual relationship now existing.

Another complaint from Washington is more serious and is presented here for the information of this convention and to secure at your hands an expression of opinion that will safely guide our members in that state, viz.:

"Lately there have been several failures here among contractors, and the bonding companies have taken the stand that they would protect the owner of the property but would also protect themselves by fighting every case on all the legal quibbles, or offer to discount the bills if they settle. This procedure may be very expensive and unpleasant for the material men and can be kept up indefinitely by the bonding company. We have in mind now the National Surety Company of New York, who are at present playing that game. We thought the proper way to meet it would be to have the material men agree not to furnish material to a contractor except for cash on a building where the bond was furnished by those people. Please give us all the information you can on the subject."

The complaint then goes on to name a number of firms who might be interested in membership in the National Association if something can be done to overcome the thing complained of.

This last complaint is dated January 28th and has been held for the attention of this convention.

The complaint from the state of Georgia has to do with a large gypsum company whose methods are objected to by all the dealers in Atlanta. An investigation of this case brought out a reply from the gypsum company involved. In this reply they say that it is their policy to "sell through the dealer." It is a fact, however, that while this company makes this declaration of principle with regard to trade ethics, they still reserve the right to sell both principle and sentiment aside when necessity requires. Our members in Atlanta advise that a representative of the company referred to has visited them and made some promises which tend to restore harmony, and the present status is explained more fully by the following quotation from a letter signed by all the Atlanta dealers: "If the agreement is carried out the dealers will be satisfied, but should this agreement not be carried out we will again take the matter up with you."

The complaint from Ohio has to do with a brick concern in Columbus, which is reported to be selling direct to contractors and consumers. This company is not a member of this organization and, although we have addressed them three times in a courteous manner and offered every opportunity to them to declare themselves, no reply has been received to date. We have also interested our vice president from the state of Ohio in this complaint and the papers are still out. The president of the brick company is abroad and may explain the delay.

In the case of Nebraska the complaint is against a Portland cement company. It appears that the dealers of the state handle certain brands of cement and in a recent building operation there put in their bids. When the job was let it appears that a Chicago architect specified a brand of cement not handled by the dealers in Nebraska and the result is that one of our members has been compelled to handle this cement upon a basis which he considers unreasonable. So far as your secretary is concerned he cannot see his way clear to justify the complaint. Manufacturers have a perfect right to create a demand for their product, and the fact that no dealer in the state handles that particular product is no good excuse for expecting the manufacturer to "keep off." Your secretary is of the opinion that the day is fast approaching when the judgment is that the dealer is fast approaching when the demand created by the manufacturer must be recognized and the dealers place themselves in a position to furnish just what is specified. This is what cooperation means and is the real essence of reciprocity. I might say that the Portland cement manufacturer involved has an excellent reputation for recognizing the dealers, but complaining of this and not tending to foster the very relationship that we are trying to have prevail. This association declares as a cardinal principle as follows:

"We believe and maintain that the dealer is a legitimate and natural factor in the distribution of building materials, and as such is entitled to the generally established rules of trade."

It is also believed by the members of this association that the manufacturers should create the demand for their goods and it naturally follows that the dealers of the country expect to be the legitimate channel for the distribution of these goods, therefore when a dealer takes the position that the "channel is not open" he simply stops the flow of trade in one direction and causes it to break out in another, and when this "break-out" occurs it generally results in disaster to the dealer and to the advantage of the manufacturer and at the same time seriously interferes with the relationship that we, as dealers are trying to maintain. We had a similar case in the state of Kentucky and we are pleased to say that the cement manufacturer involved made a most respectful bow to the "live and let live" principle, i. e., the recognition of the dealer, but the dealer involved appears to take exception to the position of your secretary as outlined above and seems to think that a dealer cannot be expected to handle every brand of every material and that when the particular brand called for is not handled by a dealer in a particular town then the dealer expects the manufacturer to "keep off." We have no hesitancy in denouncing this policy or principle and believe that the sooner the dealers of the country eliminate even the idea of such a thing the better it will be for the dealer and for the manufacturer and for the mutual relationship that we, as an association, stand for.

In connection with the Tennessee complaint a certain cement manufacturer was involved. Upon taking the matter up with this company they made a very complete statement of their side of the case and the reply of the dealer will be the best explanation of the outcome, viz.: "We wish to say that we have straightened matters out satisfactorily to all parties concerned. Thank you for your interest in the matter."

In the Missouri complaint the same gypsum company involved in the Atlanta complaint is in question, and they have been in question in other states. With all the information in hand your secretary cannot but believe that this company is not adhering as closely to our trade ethics as they should. In other words, they believe in this association and in the principle of distribution through dealers, but they also believe in selling direct to contractors and consumers whenever they get a chance, and unless we are able to show to them the unreasonableness of their position it is entirely likely that they will continue to be the subject of more or less complaint and that their policy will act to the detriment of the dealer. We have no hesitancy in saying that the concern in mind is a member of this association and that their officers say they desire to sell through the dealers, but the only way to secure a strict adherence to the trade ethics announced by this asso-

ciation is to ventilate the complaints referred to in every proper and lawful way and then leave the individual dealer to decide for himself his future policy with that company.

VICE PRESIDENTS.

We have now twenty-eight representative dealers elected to represent their respective states as vice presidents of this organization.

In previous annual reports we have deplored the fact of not being able to secure the co-operation between the vice presidents and the secretary's office which we believed to be due, but we are pleased to report that of the twenty-eight vice presidents now on the list we have been able to carry on a very successful correspondence with twenty-five out of these twenty-eight during the past year and to say that they have rendered valuable service. The three gentlemen who have not responded to our call are all successful dealers and good members of this organization, but they simply seem to be too busy to give association affairs any attention. We believe in their ability and we need their influence and support and earnestly trust that during the following year they will redeem themselves by a more personal interest in association affairs. Under the present organization the vice presidents of this association are really the official representatives of the association in their respective states, and while there is no salary attached to the position, yet a little attention to association affairs would amply repay them for any effort expended. We believe that the position gives a man a prominent standing in the trade in his state and should bring him in close touch with the building material affairs of his state. This naturally brings him into personal contact with the dealers. Personal contact leads to acquaintance, acquaintance to fellowship and fellowship to the confidence that should mean very much in the way of returns to our vice presidents.

MEMBERSHIP.

At the Louisville convention we had the following:

	Honor.	Active.
At the opening of the last convention.....	198	102
During the year we have taken in new members as follows.....	67	26
During the year 1910 we have lost by resignation.....	265	128
During the year 1910 we have lost by resignation.....	21	12
Leaving our membership as of January 31, 1911.....	244	116
This makes a net gain in membership of fifty-four active and honorary on the opening day of this convention for the current year and we stand.....		360
The causes given for the thirty-three resignations during 1910 are as follows:	Active.	Honorary.
Out of business.....	3	..
See no advantage.....	1	..
Withdraw, no explanation.....	8	3
Non-payment dues.....	2	..
In hands receiver.....	1	2
Joined for one year only.....	2	..
Dues too much.....	2	1
Don't care to renew.....	..	5
Merged with another company (members).....	..	1
Total.....	21	12

During the year we have addressed systematically over 4,600 prospects. Our officers and vice presidents have furnished names of such prospects as they have addressed and the secretary's office has followed up by direct correspondence. We do not hesitate to say that the results should be very much in excess of the above report. It is a fact, however, that the financial condition of the association, during the past year, has largely interfered with the arrangements of the Executive Committee in this membership campaign and has prevented a number of visits, by your secretary, that were expected to yield good returns. Take, for instance, the state of Texas. Our vice president in that state, Mr. L. W. Macatee, has not only produced a half dozen applications, but has worked faithfully with your secretary in reaching some 450 prospects in that state, and every arrangement had been made to call for a state meeting at Houston, Tex., on November 14, where we fully expected to form a state organization and secure the support of these gentlemen to the National Association, but the finances would not justify the secretary making the trip and we have had to carry our campaign on by correspondence. In this campaign we have not only had the loyal support of our vice president mentioned, but of several of the new Texas dealers enrolled.

This same condition practically exists in Wisconsin, Minnesota, Iowa, Arkansas and Tennessee, and we earnestly trust that the new year will bring about a condition that will enable the association to follow up the good work of the last few years and to occupy the advance position merited by the aggressive work mentioned. Also that a more personal interest in the affairs of the association by the active members now enrolled will assist in bringing about this result.

In our call for the present convention we have not only opened the gates, but we have unhinged them, and for several months have been inviting the dealers of the country to attend the convention. We have also invited our members to extend similar invitations to the dealers in their city and section and it is entirely possible that there are a number of dealers who have accepted this invitation and are now seated with us. Not only so, but the Cement Show and this convention have undoubtedly attracted a large number of manufacturers and dealers to the city. It will be our pleasure to meet with these gentlemen during the few days of the convention. Your secretary begs to suggest the opportunities of the occasion and the fact that he has a goodly supply of application blanks on hand and will be very glad to have the members take some of these and present them to their friends as they meet. Last year we secured some thirty-three new members during the two convention days. May we not urge you to double that number this time?

The opportunities of the convention now opening are unlimited. The program has been the result of several months' effort. The gentlemen who are scheduled to present papers have not only paid us the compliment of their presence but have given their time and study to the subjects assigned. A full and free discussion of every subject is expected. The question box feature opens up an opportunity never before enjoyed, and should yield very practical results, and your secretary now appeals to the membership present to take more than an ordinary interest in the sessions and subjects of this convention,

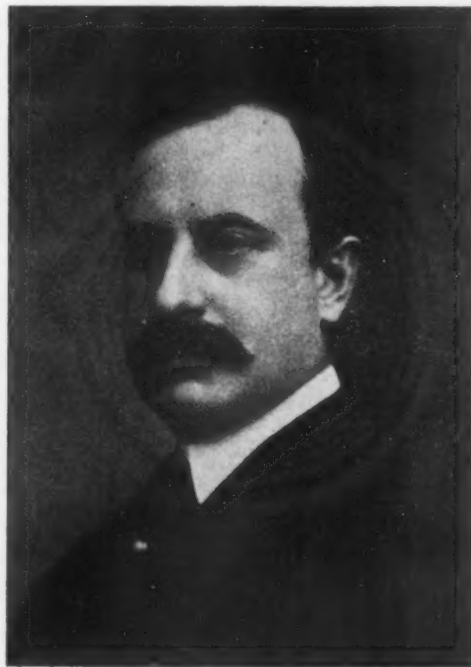


J. M. HAMILTON, ROCHESTER, N. Y., BEFORE HE SHAVED HIS MUSTACHE.

and in the discussion of each. In other words, your secretary respectfully appeals to you to make this convention "worth while." This can be done only by your prompt attendance upon all the business sessions and your active interest in all the convention affairs. If you do this we are satisfied that you will go away from Chicago firmly convinced that the National Association is a real necessity, that it is doing excellent work, that it is harmonizing the trade, that it is educating the dealer, and that it is benefitting and protecting in a way that is worth far more than any possible cost.

FINANCES.

The treasurer's report is before you. The executive committee has pushed the work as far and as fast as the means at their disposal would allow. They have spent all the money received to benefit you and have personally advanced to the association such amounts as were actually necessary to keep the work up to the standard of efficiency intended. Not a dollar has been spent unwisely. On January 31st, 1911, there was owing to the association in unpaid dues \$2,688, enough to practically close out the year with a handsome balance. During the year the receipts have been exceedingly slow and sometimes few and far between from a considerable portion of our membership. If we could only impress upon these the idea that the dues in this association are based solely upon the needs of the work and that "he who pays promptly pays twice," your executive committee could give more prompt response to the many calls of the states. Unfortunately some of the members enrolled do not look upon the item of dues as a moral obligation and do not hesitate to pigeon-hole invoice after invoice, or to resign when pressed closely for their share. Let us hope that there will be a decided change in this matter during



CHARLES A. KIMBALL, SALES MANAGER ATLAS PORTLAND CEMENT COMPANY.

the coming year and that an active interest in the affairs of the association will guarantee the prompt payment of every account and the prompt reply to every appeal made. To the majority of our members, who appreciate the importance of the work and who respond promptly and cheerfully to every call we are indebted, their action has made possible the results accomplished and we hope this majority will increase. Your secretary believes that the dealers enrolled in our membership list are among the most progressive in the business and that they will cheerfully contribute to aggressive work, and without consulting the national executive committee he feels at liberty to say that the men in this room today are not only able but willing to lift this work to a more successful and less annoying financial basis, and if every man in this room now would appreciate what the national executive committee is trying to do, and will consider for a moment the great need of finances to push the work, that each of you would be willing to make a contribution right here and now, a contribution that would prevent a moment's worry from now until the next convention, and I earnestly trust that the situation will appeal to you in such a way that, as one man, you will rise to the occasion and here and now produce the necessary cash to finance this thing.

BRICK.

During the past year your secretary has been working with the brick manufacturers of the United States through the Building Brick Association of America, and through the National Brick Manufacturers' Association. In this work he has been assisted by the secretaries of the two associations mentioned and several applications have already been received.

A formal letter of invitation to both organizations was presented at the annual convention of the brick manufacturers at Louisville during the present month and we are expecting favorable returns from their consideration. At the invitation of your secretary two gentlemen have consented to discuss the question of brick before this convention. They are representative men in the business and loyal members of this organization. We have appealed to them for support on the basis of the harmonious and reciprocal relations which should exist. They have charged us with being "owned and operated" by the cement manufacturers. This we have denied in language as strong as we could express and are now trying to prove to the brick manufacturers that this is a builders' supply dealers' association, organized, first, last and forever for the benefit of the dealers, and that we desire co-operation and reciprocity with all manufacturers in all lines of building material. Some of the brick manufacturers tell me that they do not seem to be able to enthrone the supply dealers of the country upon the subject of brick and that communications addressed to the dealers are not given even the scant courtesy of a reply. Your secretary does not hesitate to say that this is wrong. If our principles are right and if we are sincere in applying the same, we, as dealers, owe it to every man who manufactures an article that enters into the business to seek at his hands the opportunity of distributing his product to the contractor and consumer. Some dealers say that there is no money in handling brick—others say that they have tried it and cannot make it go—and still others say that they do not care to handle brick. Well, gentlemen, we have two brick manufacturers on the program and a number more in the audience. They are here to present their case. They are here to solicit your interest and support. They are here to co-operate with you. They are here to declare a policy in favor of the dealer. They are here to tell you that they must sell their product and that they prefer to sell it through you, and it is up to you to carefully consider the proposition—to measure up to the opportunity—to introduce the relationship that is of benefit to every dealer, and to make such arrangement as will be in full harmony with the "live and let live" principle, and we commend the subject to your most careful consideration.

Now, in conclusion, the work of the year has been pressed to the limit of our financial ability. The report from every state is encouraging. There seems to be an awakening among the retailers of the United States such as we have never before experienced. The dealer's position seems to be well established and nothing but the dealer's apathy and indifference will keep him from the reward of twelve years' work of this organization. We are gathered together today for a heart to heart talk on the things that vitally affect our investment and our future. The program has been built along practical and profitable lines—every paper presented is worth all the cost of your presence here and the opportunities of the convention for benefit are unlimited. The fact that you are here is the best evidence of your interest and your secretary earnestly trusts that before the close of this convention much good will have been accomplished. New ideas will have been introduced and ways and means of business-getting, as well as a better basis for doing business evolved, that will redound to the benefit of the right side of your bank account and stand you in hand for all the days to come.

Before closing this report we desire to express our sincere thanks to the members of the executive committee, to the vice-presidents, and to the membership at large, for the many courtesies bestowed upon your secretary during the past year, and to wish for the National Association the dawn of an era of harmony, education, benefit, protection and unparalleled success.

The executive committee meeting, which was held on Monday afternoon, discussed at length the policy which would be analyzed during the present meeting and which would govern the interests of the members of the National Builders' Supply Association during the present meeting and up to the annual election.

The feature of the morning meeting was a talk by George E. Green, Indiana and Illinois sales agent of the Shredded Wheat Co., who chose for his subject "The Fundamental Principles Essential to Successful Organization Work." Mr. Green was formerly the state secretary of the Illinois Retail Merchants' Association and in that capacity he came in touch with the conditions which surround commercial enterprises in their operations upon a basis that gave him a very close insight into the actual basic facts upon which the entire commercial fabric is built.

(Continued on page 54A.)

ANNUAL CONVENTION

Of the Illinois Lumber and Builders' Supply Dealers at the Hotel LaSalle Well Attended.

The twenty-second annual meeting of the Illinois Lumber and Builders' Supply Dealers' Association opened Wednesday, February 15, at the La Salle Hotel in Chicago.

Great enthusiasm marked the beginning of the convention proceedings. The officers of the association had expected a large attendance, but were not prepared for the record breaking crowds which came as a pleasant surprise. There were many prominent men in the builders' supply business present, and the way they would walk up to a fellow and shake hands without knowing him showed their sincerity in wanting to make the association an assured success. Much interest was manifested in the exhibitions on the eighteenth floor of the hotel and the exhibition rooms were always crowded.

Wednesday's Program.

Miss Olive Kackley....Songs, comic and otherwise
Paddock Quartette—Employees Paddock Lumber Co.,
Pana.

President's Address.

Secretary-Treasurer's Report.

Appointment of Committees.

Discussion—"Cost of Doing a Retail Lumber Business as Related to Profits; How to Ascertain."
"Does Advertising Pay, and How to Do It."

"A Little Nonsense Now and Then Is Relished by the Best of Men".....C. D. Rouke
(With a few of his recollections on the road.)

Address by Mr. George E. Green, late secretary of the Illinois Retail Merchants' Association, on "Parcels Post and Other Trade Evils."

"The Golden Rule" in the Association.....

.....D. C. Jones, West Frankfort

Miscellaneous Discussion.

Adjourn at 2 p. m.

THURSDAY'S SESSION.

The meeting Thursday, the second day, opened up a great deal easier than the previous one. More people were present, the late comers swelling the crowd, and things went smoothly. The delegates and the exhibitors had become more intimate and

premium. The several speakers received well merited applause and when the convention adjourned at 2 o'clock the majority of the members distributed themselves over Chicago at the various theaters.

Thursday's Program.

Paddock Quartette.

Address.....Met L. Saley

Discussion—"Code of Ethics."

Appointment of Delegates.

Discussion—"Arbitration."

Address by Douglas Mallock, "The Lumbermen's Poet."

"Relations with the Pacific Coast".....

J. S. Startup and Edward H. Schaefer, of Seattle

Visiting Secretaries' Hour.

From one o'clock until adjournment Elmer H.

Adams will address the meeting upon the subject of the "Mechanics' Lien Law." If you have a special question to ask, write it out and hand it to the secretary.

Taking a Photograph of Convention.....

.....J. W. Taylor, Photographer

Adjourn for the day.

FRIDAY'S SESSION.

Friday morning at 10 o'clock the third and last session of the convention of the Illinois Lumber and Builders' Supply Dealers' Association opened at the La Salle Hotel. There was a larger attendance than at the two previous meetings, many persons having come in the day before to attend the convention and also visit the Cement show.

Members of the association were in a happy state of mind yesterday, all day. They told their own personal experiences at the meeting and gave their listeners a line on the retailer's game in the different towns and cities.

The principal feature of the meeting yesterday, outside the routine business, was the address of James W. Wardrop, secretary of the National Builders' Supply Association. He spoke at length on the retailer's trials and troubles and his talk was received with much well merited applause. Mr. Wardrop will have a splendid address prepared for the meeting of his own association, February 22-23.

Many who attended the meeting yesterday will leave the city tonight, but there are a large number who will stay over for the show at the Coliseum.

Friday's Program.

Miss Olive Kackley was again heard in songs

and recital. Her number was among the most pleasing on the program.

Paddock Quartette.

Address in Dialect.....S. A. Holcomb

Address, "Mason Supplies".....J. W. Wardrop, Esq.

Secretary of National Builders' Supply Association.

Discussion—"Should We Greet the Traveling Man with a Kiss or Kick?"

In Memoriam.

Report of Committee on Resolutions.

Committee's Reports in General.

Election of Officers.

Note—The board of directors will meet immediately after the convention adjourns.

Election of Officers.

The election of officers resulted in the following gentlemen being elected:

E. S. Cheaney, of Petersburg, Ill., president.

C. W. Hall, of Sandoval, Ill., vice-president.

N. E. Holden, of Danville, the retiring president,

and C. B. Moore, of Aurora, directors.

George Wilson Jones, the former associate secretary, was appointed secretary to fill the place vacated by George W. Hotchkiss, who retired to take a much needed and merited rest. Mr. Hotchkiss will be secretary emeritus.

The members of the association voted Mr. Hotchkiss the best secretary they had ever had, and presented him with a substantial remembrance, after which he gave a speech, telling of his honor in being the secretary and in receiving so many compliments on his work.

Miss Kackley then gave an entertaining recitation and the meeting adjourned.

THE EXHIBITION FEATURE.

The exhibitors at the meeting had the run of the eighteenth floor of the hotel, and they needed it. Salesmen doing their stunts in and out of the rooms; retail dealers eager to buy, but not knowing which firm to patronize, stood in the halls and looked to their hearts' content.

The Chicago Portland Cement Company was much in evidence in Room 1814, and their books on the trade being handed out were snapped up with avidity. These salesmen did the "handing": J. W. Beekman, W. J. Main, E. A. Mollan, E. F. Muhler, C. H. Greenleaf and M. R. Lilly. Kind regards were felt toward the last two mentioned, as they sat nearest the open cigar box.

D. H. Howe, son of A. T. Howe, the president of the Marblehead Lime Company, and C. E. Marvin, their smiling salesman, held the fate of the above



ILLINOIS LUMBER AND BUILDERS' SUPPLY DEALERS AT THE LA SALLE HOTEL.

firm in their hands in Room 1845. They had samples of their white hydrate on exhibition. Marvin had a habit of giving a person a good cigar and tendering him a match which would light and sputter out. After fruitless attempts to light his cigar with these matches, the receiver would be handed another by Marvin, and this one would explode with a loud noise. But these jokes only served to keep the room full and there was a continual stream of people passing in and out.

A. J. Armstrong was "talking" for the Plymouth Gypsum Company and for assistants had these salesmen: His brother, L. E. Armstrong; D. E. Roberts, J. T. Garland and H. L. Hinners. They had on exhibition samples of their new plaster board, and amused themselves by driving nails into it to show its good qualities. Habana cigars, spelled with a b, was their specialty.

That bunch of men from New York representing the Atlas Portland Cement Company has revived from the grouch they carried upon arrival in Chicago, and were trying to pass off samples of "Atlas White" as granulated sugar. It looks like that confection. "Atlas" Evans, as they call J. G. Evans, was on the job with Paul Smith, H. M. Pilcher, Daniel Heck, pronounced like "by heck"; F. A. Schmoeger and W. R. Tracy. Rumor has it that Tracy is a relative of the notorious bandit, but we cannot vouch for it. "Have a rope," said J. G. Evans, when a head appeared at the door; they were good ropes, though, and acted as a decoy to visitors. They were saving their big surprises for the Cement show and promise great things there, beginning tonight.

"Can't come too fast," said R. E. Bangham and "Billy" Collins, of the U. S. Gypsum Company, in Room 1811. They had different samples of their plaster and Sackett board on exhibition, which were viewed with interest by the visitors. These two salesmen have but recently returned from a convention of all the western and central salesmen of the U. S. Gypsum Company, held at Fort Dodge, Ia. There were sixty salesmen present. Rest and comfort could be found at all hours in their room. Owing to the fact that the dining-room was on a lower floor, no refreshments were served except the liquid sort, say, ice water and claret lemonade.

Pretty soft at the Lehigh room. The Lehigh Portland Cement Company was represented by F. E. Paulson, sales manager, and Louis J. Moss, B. L. Swett and A. H. Eccles. They handed out pencils, memorandum books and handy information books with a lavish hand. The orders were coming in so fast they used up all their souvenir pencils and took the writer's away just after he wrote about A. H. Eccles' change from the Marquette Cement Manufacturing Company to the Lehigh people.

Notes of the Convention.

Paul Smith, of the Atlas, was busy dividing his time between the hotel and the Coliseum. "Hard work, too," he said.

R. E. Barrows, with the Kelley Island Lime & Transport Company, was still on the job in the morning. He said the demand for Tiger Brand Hydrate Lime is increasing rapidly. The company put in 14 kilns last year and new hydrating machinery; they expect to install 14 more this year at their plant at Whiterock, Ohio.

We print herewith a revised list of the Plymouth Gypsum Company's men: L. E. Armstrong, president, there with the social side; D. E. Roberts, sales manager, who leaves tonight for Fort Dodge to stay until Monday, he said to get some sleep; A. J. Armstrong, Illinois representative, the cigar broker; J. T. Garland, who handles the farmers of Wisconsin with kid gloves; and last, etc., H. S. Hinners, the specialty man—"I can do anything," is his motto.

C. M. Packert, with the Shirland Lumber Co., Shirland, Ill., said there was a good demand for builders' supplies in his territory.

F. J. Birmingham, Kenosha, Wis., with the Birmingham Lumber Co., shook hands with everybody with a hearty smile.

T. B. Jones, Decatur Lumber & Lime Co., had a good word for the retailers. "Success will be mine," he cried.

T. F. Harwood blew in yesterday from Bloomington, Ill., where he talks for W. S. Harwood & Brother.

L. S. Brooks is with the West Side Coal & Lime Co., Bloomington; also "Charlie" Hall, who felt sleepy but didn't show it.

Notes of the Meeting.

E. W. Barrows, with the Kelley Island Lime and Transport Company, Cleveland, Ohio, had his hands full passing out bill folders and watch fobs. Barrows will be on hand at the cement show in the Lehigh booth.

Louis J. Moss, talking cement for the Lehigh people, said they had just shipped a carload to Memphis. More of the Lehigh boys are coming in every day and there will be a bunch of them at the Coliseum.

G. E. Lavelle, assistant sales manager for the U. S. Gypsum Company, had the "Quaker" smile. He was taking orders.

HOUSTON BROTHERS COMPANY.

The accompanying illustration is a view of the big east end branch yard of the Houston Brothers Company of Pittsburgh, whose main plant and largest yard are located at Liberty Avenue and 32nd Street. This yard has both a B. & O. and a Pennsylvania connection and is one of the busiest points in the builders' supply business in Pennsylvania.

The Houston Brothers Company is an outgrowth of a business started about twenty years ago by A. C. and S. M. Houston as a local builders' supply yard at 32nd Street. It has grown to be one of the largest wholesale companies in its line between New York and Chicago. The company has seven salesmen on the road all the time and the pay roll of the different plants under its management includes more than 2,000 men. It works fifty horses at its Pittsburgh yards at 32nd Street, East Liberty and the North Side. The company has a capital of \$400,000 and the following officers: President, S. M. Houston; treasurer, A. C. Houston; vice president, A. Q. Starr; secretary and sales manager, J. W. Windsor.

The Houston Brothers Company makes a big spe-



RETAIL YARD OF HOUSTON BROTHERS COMPANY, PITTSBURG.

cialty in several lines of builders' supplies, which have given it a national reputation. Its sewer pipe factories at Empire, Uhrichville and Junction City, Ohio, ship both fire clay and shale sewer pipe, and can make very attractive freight rates, both East and West. In the brick business, the company is known chiefly by its Devonshire tapestry brick, which are manufactured at Trafford City, Pa., on the P. R. R., at the rate of 35,000 a day. This brick, during the past two years, has come into general favor with architects and contractors in the middle and eastern states. The company has had a fine trade in New York and also in Chicago. The brick is very hard to make, inasmuch as many clays will not burn at all, and from an architectural standpoint it is one of the most handsome building materials in the market.

The Houston Brothers' slate quarries are located at Bangor, Pa., where the product is black roofing slate and Grandville, N. Y., where sea green slate is made. Its trade in roofing slate is by far the largest of any concern in the Pittsburgh district. In lime and cement, it deals in the famous Sampson and Rex brands of Portland cement, manufactured in the Lehigh Valley district, and also distributes its own brand of pure hydrated lime for plastering and building. In addition, it is exclusive agent for the Samuel Cabot creosoted shingle and water proof cement stains and deafening quilt manufactured at Boston, which are now largely specified by Pittsburgh architects. It also handles exclusively the well known Dehydratine products from New York City, which have been used extensively in the Carnegie Library, the Keenan building and other big Pittsburgh structures. Its trade in metal lath and mason specialties is large and rapidly increasing. The company handles about twenty cars a year of lath from each of its yards. It is now grinding three cars a week of Butler county lime from the

West Winfield quarries for its agricultural trade, and also gets a large amount of lime from Virginia. Recently the company secured the exclusive agency for the Barber Asphalt Paving Company's Genasco house paints, the latest big by-product of asphalt, and also for their Genasco roofing. This paint is standing the Pittsburgh atmosphere remarkably well and bids fair to be a hard hitter all along the line. The Houston Brothers Company now handles about 1,500 cars a year of builders' supplies from its different yards. It has a very efficient organization and abundant warehouse storage for handling its rapidly increasing trade.

DETROIT RETAILERS.

Detroit, Mich., Feb. 18.—Preparations are being made by contractors and manufacturers of building materials in different parts of Detroit and Michigan for a record building year, especially in Detroit. A number of important projects are already under consideration in this city, while work has been started on others. Changes of a rather important nature will be made in the sky-line in the down-town district, as a number of new bank buildings, office blocks and stores are being planned. Work has already been started on rebuilding the big Hunter & Hunter department store, which was burned some months ago. This structure will be converted into an eight-story building, to conform with the greater part of the sky-line on Woodward Avenue. At Woodward Avenue and Gratiot, in the heart of the retail district, work has been started in tearing down one of the best known dry goods houses in the city, and a nine-story building is planned to replace it. The Dime Savings Bank has already accepted plans and specifications for a 20-story bank building, at Fort and Griswold Streets, in the heart of Detroit's "Wall Street" district. The Peninsular Savings Bank Company will also put up a typical bank structure. It will be four stories high, and will be constructed of granite.

General contractors on factory buildings also anticipate a very large season. A number of important factories will be located in Detroit in 1911 and preliminaries for the securing of sites, and later buildings, have been started.

This is the heart of the motor car industry, and the generally accepted material for factories of this nature is reinforced concrete. The Ford, Packard, Hudson, Warren-Detroit, Cadillac, Lozier, Brush, Hupp, Chalmers and other well known car companies have used these materials very largely in the construction of their plants, and they have proved very acceptable. As practiced in Detroit, factories are given daylight as one of the most important points. To get this properly it is necessary, then, to have a strong body to the walls. Reinforced concrete permits and furnishes this. A number of large churches will also be built in the city during the year. On Woodward Avenue, the city's main thoroughfare, during the past year a number of beautiful edifices have been erected, and a number of others are projected. Cement will enter largely into the wall construction work in these.

"We anticipate a very large building season, perhaps larger than the record year of 1910," said a member of the firm of A. Albrecht & Co., general contractors. "There are a number of very important projects now under way and a lot of figuring is being done by different companies throughout the city. We believe that the spring will show a great volume of business. January showed a record for building permits, there being \$1,000,000.00 more in permits let than in the same month in 1910. And we thought 1910 an exceptional year."

"A great number of homes are also being projected. The city will undoubtedly expand greatly during the year, especially in the north, northeastern and northwestern sections. Factories are going to these districts, and good prices are being secured for property."

"Our company is now working hard, and we will be rushed a great deal more before spring fully opens up."

The Superior Construction Co., of Houghton, has filed articles of incorporation. The men backing the concern are Howard Felver, of Houghton, and Fordyce Bottum and Frank Bacon, of Milwaukee.

The Merchants' Ice and Fuel Company, of Paris, Ill., has begun the manufacture of concrete materials. C. H. Lambs will be superintendent of this department.

William Laban, manager of The Apex Concrete Roofing Tile Company, of Grand Rapids, Mich., arrived in Chicago yesterday and will remain to the close of the great Cement Show.

THE FIRST BANQUET AND VAUDEVILLE.

The Manufacturers' and Contractors' Club of Pittsburg was organized nearly a year ago, with forty-five members. This membership is now double and it bids fair, before long, to include every eligible man.

The motto of the club is "Good Fellowship and the Betterment of Building Interests." Their headquarters are in the Lewis building, and each Tuesday they have luncheon together and four times a year a banquet. Monday, January 23, was the last banquet, and the evening was made a memorable one because of the large attendance. Scott A. White was chairman, and James W. Wardrop, the toastmaster. Addresses were made by D. L. Gillespie, Edward Stotz and others. George T. Heppenstall was the chairman of the committee on vaudeville. To those who know George, this means that it was the best that could be had. There were 225 who sat down at the table, and the following is a list of the members of the Manufacturers' and Contractors' Club:

American Gypsum Co.
Anderson-Darragh Co., Ltd.
Bartley-Kennedy Co.
Brogan, Edw.
Calhoun & Miller,
Carson & White,
Carter Electric Co.
Cleveland Stone Co.
Cochrane, R. K.
Constable Bros. Co.
Craig Electric Co.
Crown Wall Plaster Co.
Detrick Co., E. J.
Diebold Lumber Co., E. M.
Dodge Co., F. W.
Doubleday-Hill Electric Co.
Duncan & Porter Co.
Duquesne Construction Co.
Eichleay Jr. Co., John.
Furnace Run Saw Mill & Lumber Co.
Graff, Jacob.
Hamilton, T. J.
Heppenstall & Marquis.
Higgins, Lawrence J.
Holmes, Samuel.
Houston Bros.
Iron City Sand Co.
Irwin Manufacturing Co.
Jones & Laughlin.
Kennedy Co., D. J.
Keystone Lumber Co.
Knox, Strouss & Bragdon.
Kratzer Co., W. N.
Kreusler, H. L.
Lee Construction Co.
Lingenfelter, Fred.
Logan Co., The.
Logue Bros. & Riviere.
McNulty Bros.
Maginn, P. F.
Marshall Bros.
Marshall Foundry Co.
Murphy, S. N.
National Fire Proofing Co.
National Mortar & Supply Co.
Nicola Building Co.
Otis Elevator Co.
Patterson Coal & Supply Co.
Pope Stone & Brick Co.
Rapp, A. C.
Rasner & Dinger.
Richey, W. H.
Richmond, John L.
Riffe, D. T.
Rodgers Sand Co.
Ruud Manufacturing Co.
Sefton, Ross K.
Shenk Co., Henry.
Smith, C. S.
Sommerville Iron & Bronze Co.
Springer & Patterson.
Steiner & Voegtley.
Stockhausen & Son, Jos.
Stuart, James L.
Taylor & Dean.
Trimble, S. P.
United States Gypsum Co.
Universal Portland Cement Co.
Vilsack-Martin Co.
Wadsworth Stone & Paving Co.
Weldon & Kelly Co.
Wilson Co., A. & S.
West Virginia Fire Clay Co.
White, Scott A.

OMAHA'S BUILDERS' SUPPLIES COMPANIES.

Omaha, Neb., Feb. 17—A larger volume of trade in cement, plaster and lime and builders' supplies was handled last year by the large dealers in these materials in this city than can be remembered by them for many years in the past. It was an exceedingly good year in concrete construction work and all the dealers belonging in the "live wire" catalogue believe that indications this year point to as large a volume of business and better than that of 1910. Building operations in Omaha last month started satisfactorily and large quantities of cement will be required in the concrete construction improvements now under way and in contemplation.

The C. W. Hull Company has been in existence nearly a quarter of a century and is among the largest dealers in this city, furnishing builders' supplies and material in carload lots throughout the state. Its south side yard is one of the most up to date and largest in the country, occupying nearly twelve acres of ground. The office building of this



L. B. McCOUN CO. QUARTETTE, OMAHA, NEB.—A WHIRLWIND IN BUSINESS, A ZEPHYR IN SONG.

yard fronts Spring Street, is one story in height, and basement. It is of concrete construction, with ornate tile roof. Low pressure steam heating plant and storage vaults are in the basement. Double scales of Fairbanks, Morse & Co.'s manufacture are between this building and the teamsters' waiting room, back, connected by the tile roof extending over scales; a small storage house in rear with underground gasoline tanks, capacity 300 gallons, for supplying the five autos with gasoline daily, used by the salesmen of the firm; also three steel storage tanks for lubricating oil, capacity 100 gallons each.

Ten docks, 50 feet wide and 30 feet long, built of concrete and separated by concrete retaining walls 4 to 12 feet high, as required by the natural slope of the ground, receive the coal for city delivery. The warehouse for storing cement is of concrete construction, including walls, floors and roof, is 300 feet long by 30 feet wide. This warehouse has fourteen sliding doors with automatic locks, and large windows over doors, making the interior light as day; its storage capacity is 10,000 barrels of cement. A coal warehouse of concrete construction holds 10,000 tons of coal. A unique feature connected with this warehouse is its automatic unloading and gravity loading of all coal handled there. Five switch tracks from the C., B. & Q. R. R. 750 feet in length run through this great yard alongside of warehouses and bins. Numerous concrete driveways 20 feet wide and 200 feet long spread through the yard, economizing handling material to the best advantage.

Cement of the United Kansas and Iowa Portland Cement companies are handled at this year; plaster of the U. S. Gypsum and Acme Cement Plaster companies; lime in bulk and barrel from the Rogers Lime Co., of Arkansas; sewer pipe of the Lehigh Sewer Pipe & Tile Co., Iowa, Monmouth Mining & Mfg. Co., Monmouth, Ill.; sand and crushed rock, with a full line of builders' supplies specialties.

J. H. Sunderland founded the builders' supplies business of the Sunderland Bros. Co. in Omaha in 1883, which has grown since that time to mammoth proportions in the state of Nebraska. The company operates three yards in this city; one on the North Side; one on the West Side; these two yards are on the Missouri Pacific Railroad, while the South Side yard is on the Burlington and Union Pacific railroads. Each of these roads serve all of the switch tracks in the three yards. The area covered by these yards is ten acres of ground. The entire storage capacity of all of its yards in the city runs up to 20,000 barrels of cement. The driveways, team tracks and switch tracks in these yards are so arranged as to enable handling all material with the least labor and economizing of time. It has five traveling salesmen who cover Iowa, Nebraska, Kansas and South Dakota. It operates its own teaming service, using the highest class that can be bought, and keeps 40 to 50 teams busy delivering fuel, coal, coke, builders' supplies, builders' specialties, faced brick, and handles marble and tile work. It has the state agency for the product of the Iowa Portland Cement Co., the Ashgrove Lime & Portland Cement Co.; handles lime in bulk, barrel and hydrate, and also represents the Dickey Clay Mfg. Co., handling its sewer pipe. It owns stone quarries which furnish the crushed rock it handles. The officers of this company are: J. H. Sunderland, president; L. C. Sunderland, vice-president; J. A. Rockwell, treasurer, and R. E. Sunderland, secretary.

An entire block is occupied by the builders' supplies yard at Twenty-eighth Avenue and Taylor Street by R. H. Morehouse Co. Its main offices are in the City National Bank Building. Two switch tracks from the Missouri Pacific Belt Line run into the yard and six broad driveways enable the company to handle all of its material in the most economical manner and to make deliveries prompt-

ly to jobs within the city limits. The storage capacity of its warehouse is approximately twenty-five carloads of cement. It handles cement of the United States Portland Cement Co.; plaster of the United States Gypsum Co. and the Cardiff Gypsum Plaster Co.; lime of the Pierce City Lime Co., Missouri, in bulk and barrel; hydrate from the Hannibal (Mo.) Lime Co.; sewer pipe, common and pressed brick, sand and gravel, crushed rock and all builders' supplies specialties. The company bought recently property at Thirty-ninth street and Leavenworth, where it will, before summer, open another yard. Officers of the company are: R. H. Morehouse, president and treasurer; F. E. Wilhelm, vice-president, and F. W. Parr, secretary.

It is said that one solid block of the most valuable property in Omaha owned by any company dealing in coal and building material is occupied by the L. B. McCoun Co. at 1201 South Sixteenth Street, where also the main offices of the company are located. Three switch tracks run through, while one runs alongside of the yard, all from the C., B. & Q. Railroad. A unique innovation on the driveways in the yard has been introduced by L. B. McCoun for quickly handling heavy material, like sewer pipe, brick, etc. It consists of light rails for movable track which is put down in 16-foot sections and can be carried and laid wherever required by two men. A device for connecting these sections, invented by Mr. McCoun, is used. Driveways radiate from the center to all points in the yard. In the coal and builders' supplies lines this company is said to be the largest employers of teams in Omaha. The storage capacity of its warehouse runs over 120 carloads of cement. This yard handles cement of the Western State Portland Cement Co.; is the state agent for the plaster of the Plymouth Gypsum Co.; sewer pipe of the Plymouth Clay Products Co.; lime in bulk and barrel of the Rogers White Lime Co., Rogers, Ark.; hydrate of the Western Lime & Cement Co.; sand, gravel, brick, crushed rock, builders' specialties, and handles the entire output of hollow building tile of the Omaha Brick & Tile Co.

The L. B. McCoun Co. quartette is a valuable asset, as it is a "Whirlwind in Business and a Zephyr in Song." The following are its members: George M. Wallace, salesman, first tenor.

Hugh E. Wallace, sales manager, wholesale department, second tenor.

Edward Williams, salesman, bass.

Donald A. Johnson, manager retail sales department, baritone.

This quartette has been invited to scores of conventions in the Western States, receiving admiration and becoming famous as sweet singers. The company was incorporated in 1906 with the following officers: L. B. McCoun, president, and M. D. McCoun, secretary and treasurer. The company is known as the "Plaster Kings of Omaha."

P. J. Creedon & Sons, at 4519 Dodge Street, are among the largest general building contractors and dealers in builders' supplies. They have a yard on the north side of Dodge Street, at this point nearly a block square, and one nearly covering the same area on the south side. These yards have a switch track 800 feet long from the Missouri Pacific Railroad. Broad driveways run through the yards for economical handling of material. The storage capacity of their two warehouses is 20,000 barrels of cement. They handle cement of the U. S. Portland Cement Co.; plaster of the Cardiff Gypsum Plaster Co.; lime of the Pierce City (Mo.) Lime Co., both in bulk and barrel; also brown lime of the Mankato (Minn.) Cement Works; hydrate of the Marblehead Lime Co.; sewer pipe of the Lehigh Sewer Pipe Co., of Iowa; sand, gravel, crushed rock, brick, etc.

The Power-Heafey Coal Co. was incorporated in 1904. The main offices of the company are at 217 South Thirteenth street and the yard at 730 South Seventeenth Street. Four switch tracks run through

the yard and one alongside of it, each 900 feet long, from the Union Pacific Railroad. The storage capacity of its warehouse is 1,500 barrels of cement. The company handles cement of the Atlas Portland and Kansas City Portland Cement companies; "Kearney's Bricklayers' Cement" of the Mankato (Minn.) Cement Co.; plaster of the U. S. Gypsum Co.; lime of P. McKinley, of Arkansas, mostly in barrels; sewer pipe, sand, gravel, crushed rock and a full line of builders' supplies specialties. The officers of the company are: P. C. Heafey, president; John Power, treasurer and manager, and J. J. O'Rourke, superintendent of yard.

C. N. Dietz founded the present business of the C. N. Dietz Lumber Co. forty years ago. The company operates four yards; one at Fourth and Leavenworth Streets; one general yard at Thirteenth and California Streets in Omaha, and one each in the suburbs of Benson and Enterprise. The yards in the city are respectively on the C., B. & Q. and the Union Pacific Railroads, with switch tracks running through them and broad driveways giving the company excellent shipping and delivery facilities. It keeps many double and single teams busy hauling building material in the building seasons. The storage capacity of its warehouse is 5,000 barrels of cement. Its principal business is handling lumber. It has the state agency for the cement of the Altoona (Kas.) Portland Cement Co., the Fredonia Portland Cement Co., Kansas; handles plasters of the U. S. Gypsum Co. and a complete line of roofing material. It has a line of lumber yards in Nebraska, Wyoming, Colorado, South Dakota, Iowa and Kansas.

McCaffery Brothers Co., with main offices at 213-215 South Seventeenth Street, last year, in April, bought the coal and building material yard at Twelfth and Paul Streets of the Nebraska Coal & Lime Co. The yard is located on the Illinois Central and the Omaha Bridge & Terminal Railroads, has four switch tracks from these roads running into it and eight broad driveways reaching all points in the yard. The warehouse, located between two switch tracks, has a storage capacity of 4,000 barrels of cement. The company handles cement of the Atlas Portland Cement Co.; plaster of the U. S. Gypsum Co.; lime in bulk and barrel from Gallery, of Fayetteville, Ark.; brown lime from Fowler & Pay, Mankato, Minn.; sewer pipe of the Plymouth Clay Products Co.; crushed rock, sand, gravel and all other building specialties. W. J. McCaffery, president, stated that its business at the end of practically twelve months had been trebled.

The yard of the Updike Lumber & Coal Co., at Forty-fifth and Dodge Streets, is located on the Missouri Pacific Railroad, with switch tracks running into it. Its main offices are in the Bee Building. A. L. Snow is the manager of the builders' supplies department. It has the exclusive representation of the Kansas City Portland Cement Works; handles the products of the U. S. Gypsum Co. and the Duka Plaster Co., of Rapid City, S. D.; lime of the Hannibal (Mo.) Lime Co. and the Rogers White Lime Co.; sewer pipe, common and pressed brick, crushed rock, sand, gravel, etc. It does a very extensive wholesale business throughout the West.

HEDGES SAND AND GRAVEL CO.

Austin, Tex., Feb. 16.—The plant of the Hedges Sand & Gravel Co. at Columbus, Tex., is turning out large quantities of sand and gravel, which is being shipped to many parts of the state. The chief markets for these materials at present are Galveston, Houston, Beaumont and Bay City. They are used for the construction of roads, streets, cement sidewalks and concrete buildings. The plant is well equipped and turns out three grades of material. The deposit in the Colorado river, from which the company obtains its supply of these materials, is said to be inexhaustible, and as the demand for them is constantly increasing, the plant will be enlarged from time to time.

The Western Pennsylvania Commercial Company, capital \$5,000.00, has been organized with offices in the Fulton Building in Pittsburgh, to take the place of the Pennsylvania Lumber Dealers & Builders' Supply Credit Association. It has been in existence several years. The Commercial Company will furnish ratings on contractors and builders chiefly. Its membership will be among retail lumbermen and builders' supply men. For the present it will limit its operations to western Pennsylvania, but later it expects to extend into West Virginia and eastern Ohio. The officials of the company are: President, Geo. N. Glass; first vice-president, John A. Strouss; second vice-president, J. C. Adams; secretary and treasurer, A. C. Rightor.

PITTSBURGH RETAILERS.

Pittsburgh, Pa., Feb. 18.—Pittsburgh builders' supply men in general are encouraged over the prospects for spring trade. Just now the weather is holding up everything. The roads are impassable. Deep snows and high water have made hauling very difficult the past two or three weeks. No building operations to speak of have been started and contracts are just beginning to be let for street, road and government work. Retailers are stocking up a little more heavily than they did last year, which indicates their confidence in the return of good business. Prices have changed a little, sewer pipe having gone down about 5 per cent and lime having advanced 15 cents a barrel.

W. H. Williams & Co. report a pretty good call for cement and say that prices are very reasonable. Their advices indicate that stocks at the plants are pretty heavy as a rule. This concern reports a heavy production of sewer pipe with consequently lower prices.

Miller & Coulson say things look fine. The lime and cement business is better than the average in other lines. Their plant at Salineville, Ohio, is running and they will start their operations at Reynoldsville, Pa., shortly. According to this firm the indications for spring trade are better than for several years.

The Birmingham Builders' Supply Company have not been getting any contracts but believe there will be more building this spring and more street work let in every part of the city.

The Beechview Builders' Supply Company announce a fair trade with good prospects for spring building in Tunnel Land. Although business is not starting rapidly they look for a very steady and substantial gain in spring trade.

William T. Liggett Company announce that their salesmen are doing fairly well and see no reason for being discouraged. With better weather the company believe trade will get righted up pretty soon.

The Crafton Builders' Supply Company is not complaining any. Considerable building is going on in its end of the city, and the prospects are that the total will be away ahead of 1910 records.

McKallip & Co. have gone out of the coal business entirely. They report little work being let in the city for street jobs owing to political mix-ups and bad weather.

James T. Fox in the West End says there are several big paving jobs on in West Pittsburgh which will make good business there soon. He has had the best winter in three years and regards the prospects for building as good.

The Manufacturers' & Contractors' Club of Pittsburgh banqueted at the Fort Pitt Hotel January 2d, with D. L. Gillespie as toastmaster. Among the speakers were Architect Edward Stotts and J. W. Wardrup, secretary and general manager of the National Builders' Supply Association. The officers of the club for this year are: President, Scott A. White; secretary and treasurer, Joseph A. Weldon.

The Builders' Exchange League, which now numbers 125 members and has roomy offices in the Lewis block, has elected the following officers for this year: President, W. N. Kratzer; first vice-president, John S. Elliot; second vice-president, F. C. Jones; treasurer, T. J. Hamilton; secretary, T. W. Jones, and executive clerk, J. A. A. Brown.

Builders' supply men are greatly interested in the contest now going on to see whether the Shingess or Haberman avenue site is selected for the proposed bridge across the Monongahela river and tunnel through the South Side hills. The County Commissioners of Allegheny County are sure to decide on one of the sites soon and no time will be lost in getting work started, it is said. The job will require a large amount of cement, concrete, stone and other building material, and with the construction of the Point Bridge over the Allegheny river things will be lively around Pittsburgh this summer.

TOLEDO RETAILERS.

Toledo, O., Feb. 20.—Every indication at this writing points to a most satisfactory season. Architects have more work on their boards than for many years in February, more prospective builders have appeared, building supply companies are having such indications as are leading them to contract for goods on more liberal lines and every kind of public work is of greater volume and receiving greater impetus than since 1906.

Building operations in Toledo proper are much ahead of a natural increase, an increase for January being 25 per cent as compared with a year ago. The full amount of public work to be undertaken here is somewhat indefinite, even though the season is well advanced, on account of several measures pending, definite decision regarding which has not yet been reached.

Throughout northwestern Ohio equal activity is noticeable. An unusually large number of public school buildings are to be erected, perhaps the more important being a new state normal school which is to be built at Bowling Green, Ohio, and which will entail something like a quarter million dollar investment. Sewer, paving, bridge and road work will be heavy this season, the fall and winter crop of bonds sold for these purposes having been the heaviest ever experienced. Private enterprise will not be lacking, as a number of new enterprises have already been started and the demands of these will entail the erection of many buildings.

T. Joseph Degnan is no longer actively connected with the Toledo Builders' Supply Company. Mr. Degnan was for many years superintendent of the fire yards of the company and looked after the sand supply, thereby being in command of the company's fleet of sand suckers.

The Superior Supply Company reports a very successful year for its first one and will shortly declare a light dividend on its stock. Some of the stock is said to be about to be placed on the market, but from the record made by the company during its first year, it will probably not wait long to be picked up. Claud Smith, who entered the company's employ as city salesman, is now secretary and treasurer of the company.

John H. Spittler, aged 75, and one of the oldest contractors in the city, died a week ago as the result of an operation. He had only celebrated his golden wedding anniversary a week before. He was a Civil war veteran and is said to have erected a larger number of residences and business blocks than any other contractor ever in business in Toledo.

The general western office of the Vermont Slate Company is to be removed to this city from Zanesville about April 1. The company has already gained title to an admirable piece of ground along one of the belt railroads, upon which it will erect a large dispensing plant.

H. J. Jarvis, of Toledo, and H. W. Simpson, Mansfield, Ohio, are the inventors of a new peat converting machine. A company has already been financed to market the concern and in the early spring a plant will be installed in a large peat bog near Mansfield, Ohio. The concern will be known as the Union Peat Company, of Toledo.

The I. H. Detwiler Company has just been reorganized and will hereafter be known as a constructing company as well as a general real estate exchange. The company has been enlarged to include Mark Dickey, who for the past three years was treasurer of the Asphalt Block Pavement Company, and to whose aggressiveness is largely due the success of that concern.

Work on the new Cherry street bridge is progressing slowly. A lawsuit to permanently restrain the contractor from finishing his contract is slated to come up for hearing early in March. That the suit will result seriously to the city does not seem to be seriously entertained.

STATE INSPECTOR OF MASONRY.

Austin, Tex., Feb. 16.—After hearing a comprehensive statement from W. J. Moran, of Fort Worth, secretary of the Bricklayers and Masons' International Union, concerning the careless construction and defective treatment of state buildings, the House Committee on State Affairs of the legislature has voted a favorable report on Representatives Wortham and Brown's bill creating the office of state inspector of masonry.

Its decision was also affected by a report of its subcommittee, comprising Representatives Savage, Davis and Gieptner, to the effect that extras and improvements in construction on four eleemosynary institutions alone in the past two years cost the state \$70,000.00 and the office undoubtedly will save the state a great deal of money on the numerous new buildings planned for the near future.

With amendments by Representative Caves the bill provides a salary of \$2,000.00 a year and traveling expenses to the inspector not to exceed \$1,500.00 annually, requiring ten years' practical experience immediately preceding the appointment and a term of two years.

BUILDING MATERIAL MEN PROMINENT.

Mason City, Iowa, Feb. 21.—Building material men played a prominent part in the election of officers of the Mason City Manufacturers' Association. The following were chosen: President, Richard Valentine, North Iowa Brick and Tile Company; vice-presidents, R. E. Boyle, Northwestern States Cement Company; T. L. Fleming, Farmers' Cooperative Brick and Tile Company, and directors, E. O'Donnell, Lehigh Cement Company; A. F. Stephenson, Mason City Clay Works, and I. I. Nicol, American Brick and Tile Company.

ST. LOUIS RETAILERS.

St. Louis, Feb. 16.—The leading retailers and the manufacturers of cement, lime, plaster and other building materials have been busier during the past month than they had expected would be the case, owing to exceptionally favorable weather conditions. In all our lives we never witnessed such a mild winter as has prevailed for the most of the time this season. The outlook is regarded as quite favorable. There is a good deal of idle money in the banks seeking safe and fairly profitable investment, and this is a favorable factor for the building business. The city of St. Louis also is making extensive improvements in streets, sewers, etc. The street and steam railroads are expending huge sums in warehouses and terminal facilities and the leading architects are busy on plans and specifications for new office buildings, hotels, mercantile buildings, apartment houses, residences and flats. There are four or five new subdivisions of large area being put on the market, and streets and sidewalks are being laid in the same to expedite the sale to prospective investors. A feature of the present situation is the increase in the building of factories. When it is considered that the energies and the large financial resources of the Business Men's League are specially being directed to the development of the manufacturing interests of St. Louis, this is not surprising.

"I consider the outlook for business," observed Gordon Willis, of the Hunkins-Willis Lime & Cement Company, "as regards the demand for lime, cement, plaster and building specialties, better than last year or for several years. This refers both to local and outside territory which we cover. It is particularly the case with the Southwest, a section which perhaps more than any other is growing in wealth and population. It would appear that dealers, expecting the usual let-up in trade in the winter, had toward the close of the year allowed their stocks to run down and have begun to order earlier than usual, having cleaned out most of what they had on hand. Our shipments of white lime from our Ste. Genevieve plant have been larger than usual for this time of the year. Yes, I am going to the cement show," and reaching to his desk, Mr. Willis held up a "course" ticket.

"Local business," said the Contracting & Supply Company, of St. Louis, "so far as relates to large buildings has not started in yet, but we hear through the architects of several for which plans are being drawn. It is not usual for big structures to be started in the winter anyway, since there are too many hindrances to keeping things moving."

"This fine weather, unexpectedly so, is just that much velvet for us," was the rejoinder of Manager McDonald of the Independent Lime & Cement Company. "Another piece of luck is the building that has been going on in this end of the town. You know it is quite natural for people to trade at the nearest shop, all other things being equal. We've got the goods on hand and can put them at the job in short order. There is nothing that tickles a contractor more than to get stuff quick, and it often covers up his own carelessness in overlooking to order sooner. Consequently we try to score a point that way. We expect to show a gain each month over the corresponding month last year."

TWIN CITY RETAILERS.

Minneapolis, Minn., Feb. 18.—Building prospects in these cities is picking up, although things still look rather backward as compared with a year ago. But this is perhaps due in part to the dull commercial and financial situation. Inquiries among contractors, material men and sub-contractors of different kinds all indicate that they expect a fairly good season, and many of them believe that, on the whole, it will be as good as last year. They think that there may not be quite so many large jobs in building, but feel that the smaller jobs, which are better distributed, will afford as much business for the average dealer as last year did.

The legislature is in session, and there is a great deal of interest in the outcome of the so-called accident compensation bill. This bill is the result of a commission which was named two years ago and has been studying the question for two years, just lately making its report to the legislature. The commission studied the question in Germany and Austria, France and England, and its report was a divided one when it came to making recommendations.

A. J. Fay has recently resigned his position as secretary and manager of the National Stone Manufacturing Company, of Minneapolis. This company manufactures cast stone of all kinds, and has done a successful business for several years.

The St. Paul building totals for January show a good gain over the same month of 1910, the figures for the two months being \$443,954.00, against \$354,-

592.00 for the month of a year ago. The opening part of February showed a continuation of the good work, the first five days of the month aggregating \$800,000.00, and giving promise that the month as a whole would show another good gain over that of a year ago.

A recent decision of the Minnesota supreme court holds that where an employer or master sets aside certain material to be used for scaffolds, the employee is entitled to assume that the material has been inspected for possible defects and that it is safe to be used for the purpose to which it has been set out.

W. Clark Wyckoff, of Minneapolis, has been made manager of the Minneapolis office of Fowler & Pay, in the Security Bank building. This company manufactures brown hydraulic lime, Austin brick-layer's cement, and many other materials, and is doing a large and growing business in the Twin Cities. Mr. Wyckoff continues to represent the Rockville Granite Company, whose office is also removed to the Security Bank building.

The Minneapolis Architectural Club is seeking to work out a standard system of symbols for different materials to be indicated on plans. Many architects use a system of colors for materials, their blue prints showing brown for concrete, red for brick, yellow for wood, blue for stone, and so on. But there is no uniformity about it, and another architect may completely reverse the arrangement. As the electrical symbols have been standardized so that all are the same, to the great benefit of all who handle or use plans, it is felt that a similar step can be taken on other materials. The move has the endorsement and support of many of the architects, as well as builders generally, and it is to be hoped that it will prove a success.

MEMPHIS AND THE SOUTHWEST.

Memphis, Tenn., Feb. 17.—With the near approach of spring, the building outlook in Memphis is good. Supply firms indicate that the February trade has been about normal, and there is an inquiry now manifest that points to a large March business.

The Cubbins Lime & Cement Co., Inc., Edwin Fraser, manager, states has had a nice February business. The company is furnishing the cement for the paving and curbing work for the new north addition to Stonewall Place and has just completed a large contract for a monolith floor for the River & Rail Warehouse, this city, in which Royal cement was used.

The Rose Manufacturing Co. contemplate improvements to their warehouse system with concrete work in view.

The police station job will be one of the largest of the year in Memphis. The permit was recently issued. The building will cost several hundred thousand dollars.

R. W. Faxon, of the Speedway Land Co., is having \$10,000 worth of concrete paving and work done on Faxon Avenue, the Speedway and Watkins Avenue. The contract was captured by Kohler & Co., of this city. The contract for erecting a concrete bridge over the bayou on Faxon Avenue was let to the same firm.

Application for a charter for the Faxon-Chert Co. The company is to have a capital stock of \$10,000, and is to deal in gravel and road material. The incorporators are W. B. Troy, Jr., F. W. Nichols, W. A. Shibley and W. L. Lamar.

W. A. Prather & Co., of Memphis, have been awarded the contract to build a \$118,000 court house at Clarendon, Ark. Architect Charles L. Thompson, of Little Rock, prepared the plans.

The city has awarded the contract for the construction of a reinforced culvert on Barksdale Avenue to M. Larkin, on a bid of \$984.93.

Arrangements have almost been completed for a \$250,000 fireproof business house for the Wm. R. Moore Dry Goods Co. S. C. Armstrong, president of the company, has been looking after the plans. They contemplate a building six to eight stories high. The plans were drawn by Architects Shaw & Pfeil.

Frank Taylor, former superintendent of the City Hospital, and connected with the City Auto & Rubber Co., has gone to Chattanooga, where he will engage in the stone business. The style of the firm is the Monarch Stone & Lime Co.

Architect George R. Mann, of Little Rock, Ark., has been appointed to draw the plans for the new Pulaski county court house at Little Rock. The county will expend about \$200,000 in the addition and remodeling.

At Mobile, Ala., a concrete company for the manufacture of burial vaults is preparing for organization. L. O. Gravely and J. W. Long will be the chief stockholders. The vaults will be manufactured on the patents of the National Vault Co. of Newark, Ohio.

CHICAGO RETAILERS.

Chicago, Feb. 20.—Dealers in building materials in Chicago find the conditions somewhat improved since last month. They have not yet started very active operations because the building trade has not assumed its spring clothes and blossomed out. Prices are remaining steady through the winter months and every dealer is feeling optimistic about the coming season's trade. The demand for hydrated lime and for Portland cement has improved so much in the past year that these two lines now furnish one of the best fields for the retailer. The consensus of opinion is that trade will pick up in a month or six weeks at the most, and when it does open up there will be no dull season because of the proposed projects which have to be completed this next fall.

The Pringer Coal Company has been incorporated in Chicago, with a capital stock of \$10,000.00. The company will handle a full line of building materials, including lime, cement, plaster, sand, and gravel. The incorporators were E. Frink, Samuel A. Smiley, and Duncan Hines.

The Western Building Supplies Company has been incorporated at Chicago with a capital stock of \$25,000.00. The company will manufacture and deal in all kinds of building materials. The incorporators were Edward Skala, Joseph V. Suida, and aging outlook."

J. B. Tuthill, of the Tuthill Building Material Company, reported: "Trade is good now considering the severe weather we have been having. We have had a good brisk trade all the past year, and sold a great quantity of Portland cement. There has been little change in the demand or prices since last month. We believe trade will be good in the spring, as there is a very encouraging outlook."

W. L. Wood, of the Standard Material Company, said: "Trade is just a little bit quiet now, but is starting to pick up and shows we will have a good business in the spring. We are getting better prices for cement now. They were in a low state last month, but have revived lately. In our business we find a large demand for cement for use in concrete to replace rubble stone. This demand means a big sale of our materials. Believe prices will still be strong in the spring, as the demand regulates them and it will be better than ever."

J. B. Coates, of the Crescent Material Company, reported: "Our sales of cement and lime are starting up now and I believe we are going to have a good year in 1911, as good at least as we did in 1910, and that year's business was all right. We sold more lime and cement, at better prices, last year than we ever did before. Inquiries concerning concrete foundation work are starting to come in and building operations should begin in earnest next month. The severe weather this month set us back some, but trade is due and must open up soon. There are many proposed buildings to be erected in our neighborhood and these will furnish us with a lot of work."

W. Lamoureux, manager of the Lake Building Material Company, said: "Stores are being built in our neighborhood now. Prospects are very good for spring business. I think the contractors will start giving out work about the last week in March. Our work on the new yard which is about to open at Forty-seventh street and Archer Avenue is progressing rapidly, the tracks are all in and the buildings are going up soon. Things are quiet this month, but not more than usual at this time. We were satisfied with last year's trade and believe 1911 will be a good year for both our yards, when the second one is opened."

A representative of the Producers' Stone Company said: "There is much work on the boards which has not been given out yet. Among the proposed new buildings are: Insurance Exchange Building, D. H. Burnham, architect; Mandel Brothers' Building, Holabird & Roche, architects, and the Monroe Building. Waterproofing tests on the subway are now being carried on by the American Bureau of Tests. When this work comes out it will be a big thing. The price of crushed stone has just about reached its limit of height."

J. C. Brentlinger, assistant secretary of the N. A. Williams firm, said: "There is absolutely nothing doing this month. There is only the smallest bit of material being sold. We have received no prices for the past year. The slashing of prices by other dealers is the principal cause. Believe cement will be sold soon, but the month is generally dull."

The Antigo Building Supply Company, of Antigo, Wis., has completed the installation of a new 150-horsepower engine and has resumed operations. The company expects to soon increase its capital stock of \$40,000.00.

LIME PRODUCERS ANNUAL MEETING

Largest Attendance in the History of Lime Manufacturers' Association Gathered at Pittsburg—Progressive, Commercial and Technical Discussion.

The annual convention of the National Lime Manufacturers' Association was held at Pittsburg on February 2 and 3, 1911, and it was by far the most interesting, as well as most important, meeting that the association has ever enjoyed. A very excellent collection of papers was read and discussed, bearing upon both the commercial and technical sides of the lime industry. The topic of hydration was always bobbing up and it becomes more clear, with each succeeding meeting of this venerable association, that this hydrated lime is not only accepted but demanded in very increasing quantities in the most discriminating markets in the land. This is a matter of general recognition for which the National Association and ROCK PRODUCTS are accorded full credit.

Gas producer developments were considered with growing interest because this method of using the fuel in lime burning is recognized as the coming improvement of the immediate future.

Agricultural lime and scientific liming were discussed by the leading technical authorities and the commercial possibilities in this direction considered from the standpoint of practical application.

The general financial and investment features of the industry, together with observations and plans for more intelligent and co-operative marketing of the product, came in for a full round of attention.

The United States Bureau of Standards under Director Stratton gave the lime men half a day at the laboratory to examine the apparatus and methods developed in the government laboratories at Pittsburg, for the study of lime and its extended uses.

Warren E. Emley, who has personal charge of all matters relating to the research of lime, made a comprehensive report of the work that has been done to date in the laboratories and in the field.

Professor A. V. Bleininger, of the Illinois University, contributed his valuable quota to the technical work that was done at the Pittsburg laboratories, under the former organization in which he had taken considerable interest. It was explained that the great work which has been taken up at the government's Pittsburg laboratories is, as yet, merely in its infancy and that greater results are to be obtained as the work goes forward. The National Lime Manufacturers' Association has actively worked to the end of assisting the laboratories in the field in every possible way, so as to facilitate the work as much as such co-operation can attract attention.

Director Stratton expressed the interest which the technical branch of the government feel in their research on lime when he said that the laboratories were prepared to use an appropriation of double the amount of money for the coming year compared with that of the past two years. He said that the laboratories are encouraged with the progress that had been made and appreciation that had been expressed by the lime producers of the country generally.

Henry S. Spackman, of the Aluminate Patents Company, Philadelphia, showed the advantages and further possibilities of the usefulness of Alca, a patented aluminated substance for mixing lime mortars so as to accelerate the process of setting and secure a much harder plaster. In fact, the tabulated information which he exhibited as the result of exhaustive tests went to prove that Alca-plasters were quite as good for exterior work as they are for interior. This feature was subscribed to by several practical plastering experts, who were present, who have made demonstrations of Alca plasters in various ways. It was the sensation of the meeting and especially appealed to those who have extensive hydrating plants.

William E. Carson was unanimously re-elected president, and his entire cabinet were re-elected with him, as will appear in the further details of the meeting.

The attendance was the largest that has ever been recorded at a lime meeting. The interest in the papers was unrelenting from the start to the finish and, at the time of closing, the assembly might really have taken on a little more work. It was a hard working convention, for the minutes of every session were filled either with the reading of the papers or with the discussion of the same. Only in the evening was there anything like entertainment, rest or recreation. The lime men came to Pittsburg for business, and it was business every minute while they were there, and it goes without saying that every man who attended the convention

went away with his mind full of new resolves, more progressive ideas and better understanding with his neighbors than has ever existed before.

THE ATTENDANCE.

Among those present at the meeting were the following:

James C. Adams, D. J. Kennedy & Co., Pittsburg, Pa.
A. V. Bleininger, Illinois University, Champaign, Ill.
H. E. Bachtenkircher, Doles & Shepard Co., Chicago, Ill.
W. H. Bradley, Duff Patents Co., Pittsburg, Pa.
C. C. Bishop, Marblehead Lime Co., Chicago, Ill.
T. P. Black, Marblehead Lime Co., Chicago, Ill.
W. H. Barton, Ash Grove Lime & Portland Cement Co., Ash Grove, Mo.
G. G. Burlingame, Solvay Process Co., Syracuse, N. Y.
H. C. Brown, Oshkosh, Wis.
E. W. Bond, Cream City Lime Co., Milwaukee, Wis.
Charles C. Cox, Cox Lime & Stone Co., Plymouth Meeting, P. O., Pa.
Walter H. Corson, Plymouth Meeting, P. O., Pa.
George B. Catlin, Burlington, Vt.
Frank Crudden, Riverton Lime Co., Riverton, Va.
Charles H. Claiborne, Mt. Savage Fire Brick Works, Baltimore, Md.
J. M. Connell, Superintendent Union Lime Co., Milwaukee, Wis.
E. L. Conwell, Aluminate Patents Co., Philadelphia, Pa.
C. J. Curtin, Farnam-Cheshire Lime Co., New York, N. Y.
C. W. S. Cobb, Glencoe Lime & Cement Co., St. Louis, Mo.
Hon. Wm. T. Cobb, Rockland, Me.



W. E. CARSON, RE-ELECTED PRESIDENT, RIVERTON, VA.

Philip J. Dauernhelm, Glencoe Lime & Cement Co., St. Louis, Mo.
M. H. Deely, Lee Lime Co., Lee, Mass.
Warren E. Emley, U. S. Bureau of Standards, Pittsburg, Pa.
Charles Ekstrand, Lowell M. Palmer, York, Pa.
J. E. Forgy, Charles Warner Co., Wilmington, Del.
V. M. Frey, J. E. Baker Co., York, Pa.
Theodore E. Fleischer, Sheboygan Lime Works, Sheboygan, Wis.
A. P. Ferguson, Riverton Lime & Stone Co., Riverton, Va.
L. E. Gates, Genesee Lime Co., Honeoye Falls, N. Y.
H. J. Gawthrop, Marion Lime & Stone Co., Norristown, Pa.
A. M. Glasgow, Tennessee Marble Lime Co., Knoxville, Tenn.
William J. Grove, M. J. Grove Lime Co., Lime Kiln, Md.
A. M. Holden, Genesee Lime Co., Honeoye Falls, N. Y.
A. D. Hughes, Basic Products Co., Kenova, W. Va.
Henry B. Helsey, Rheems, Pa.
W. L. Helsey, Rheems, Pa.
Lawrence Hitchcock, Kelley Island Lime & Transport Co., Cleveland, O.
F. P. Hunkins, Hunkins-Willis Lime & Cement Co., St. Louis, Mo.
D. S. Hunkins, Peerless White Lime Co., Ste. Genevieve, Mo.
A. P. Hachtmann, Lehigh Car Wheel & Axle Works, Catasauqua, Pa.
J. B. Herring, Ottawa Silica Co., Ottawa, Ill.
George Heppenstall, Heppenstall & Marquis, Pittsburg, Pa.
Richard L. Humphrey, Philadelphia, Pa.
William B. Irvine, Knickerbocker Lime Co., Philadelphia, Pa.
Fred K. Irvine, Rock Products, Chicago, Ill.

Chas. C. Kritzer, The Kritzer Co., Chicago, Ill.
D. J. Kennedy, D. J. Kennedy & Co., Pittsburg, Pa.
C. M. Lauritzen, Raymond Brothers Impact Pulverizer Co., Chicago.
A. H. Lauman, National Mortar & Supply Co., Pittsburg, Pa.
E. W. Lazell, Charles Warner Co., Wilmington, Del.
Benjamin F. Lippold, Rock Products, Chicago, Ill.
J. King McLanahan, Jr., Blair Limestone Co., Hollidaysburg, Pa.
R. McCoy, Powhattan Lime Co., Strasburg, Va.
W. A. McCall, Builders' Record, Chicago, Ill.
Peter Martin, Ohio & Western Lime Co., Huntington, Ind.
T. K. Morris, A. G. Morris & Son, Pittsburg, Pa.
J. P. Maxwell, Improved Equipment Co., New York, N. Y.
W. W. Mein, Washington, D. C.
George E. Nicholson, White Marble Lime Co., Manistique, Mich.
C. B. Nicholson, American Lime & Stone Co., Tyrone, Pa.
George A. Pierce, Charles Warner Company, Wilmington, Del.
J. Y. Patterson, Basic Products Co., Pittsburg, Pa.
Joseph A. Peck, Green Mountain Lime Co., Middlebury, Vt.
Frank Piphorn, Milwaukee Falls Lime Co., Milwaukee, Wis.
W. H. Price, Urschel-Bates Valve Bag Co., Toledo, O.
W. A. Raupp, Peirce City Lime Co., Peirce City, Mo.
W. H. Roberts, Climax Lime & Stone Co., Wick, Pa.
M. E. Reeder, R. D. No. 5, Muncy, Pa.
Henry S. Spackman, Aluminate Patents Co., Philadelphia, Pa.
C. G. Spencer, National Lime & Stone Co., Carey, O.
Eugene Y. Sayer, Improved Equipment Co., New York, N. Y.
George R. Shields, Improved Equipment Co., New York, N. Y.
R. F. Sloan, Standard Cement & Lime Co., Charlevoix, Mich.
S. W. Sharp, Lancaster, Pa.
Walter S. Sheldon, New Jersey Lime Co., Hamburg, N. J.
A. A. Stevens, American Lime & Stone Co., Tyrone, Pa.
William S. Speed, J. B. Speed & Co., Louisville, Ky.
H. W. Smith, Charles Warner Company, Wilmington, Del.
A. H. Tennent, Caledonia Marl Co., Caledonia, N. Y.
Jacob L. Tyson, Philadelphia, Pa.
James N. Thayer, Thayer Building Material Co., Erie, Pa.
August C. Tews, Milwaukee Falls Lime Co., Milwaukee, Wis.
J. J. Urschel, Urschel-Bates Valve Bag Co., Toledo, O.
William Urschel, Woodville Lime & Cement Co., Toledo, O.
Charles Warner, Charles Warner Company, Wilmington, Del.
Harry B. Warner, Security Cement & Lime Co., Baltimore, Md.
Irving Warner, Charles Warner Company, Wilmington, Del.
W. A. Wasson, George & Sherrard Paper Co., Wellsburg, W. Va.
Solon B. Wright, Berkshire Hills Co., Sheffield, Mass.
L. I. Wightman, Improved Equipment Co., New York, N. Y.

OPENING SESSION, FEBRUARY 2.

The assembly room at the Fort Pitt hotel was filled to overflowing with the representatives of the lime manufacturing interests of the United States, when President W. E. Carson rapped in his energetic manner for order, and opened the meeting. Mr. Carson said that he had taken cognizance of the list of papers and other subjects and concluded that with such a menu and intelligent repast before them, the members would appreciate getting down to business right away, consequently the reading of the minutes of the previous meeting were dispensed with and the president also decided that he would dispense with any formal annual address, because the meeting itself would amount to such a document.

Messrs. Charles Warner and Walter S. Sheldon reported progress made by the committee devoted to the financial aspect of the lime meeting.

Rudolph S. Wig, chemist of the United States Geological Survey, sent a letter of regret that he would not be able to be present, but submitted his paper, entitled "The Use of Hydrated Lime in Portland Cement Mixture." This paper was passed to the official proceedings of the association.

The president announced the sad intelligence that Harrison C. Ashley, of the government Pittsburg laboratories, was sick unto death in one of the city hospitals, which would prevent his paper, entitled "Plasticity and Hardness," from being read. (Since the adjournment of the meeting, Mr. Ashley has passed to the Great Beyond. His loss to the lime industry will be deeply felt, and his place is one that will be difficult to fill.)

The president made the first selection, and Henry S. Spackman, in a very able manner, presented his very interesting paper, entitled

POSSIBLE EFFECT OF ALCA LIME PLASTERS AND CEMENTS ON THE FUTURE OF THE LIME TRADE.

BY HENRY B. SPACKMAN.

It is now some five years since I first had the honor to read a paper before your association, on which occasion I discussed the use of the rotary kiln in lime burning.

At that meeting the subject uppermost in the minds of your members seemed to be the inroads gypsum products were making on your market for lime in the plaster trade, and the necessity for the development of some process by which lime could be made quicker hardening and more convenient to handle in order to meet this competition.

That the conditions have not improved in this respect during the past five years is evident from study of the reports of the United States Geological Survey, which show a constant increase in the use of gypsum products in the building trade and a decrease in the use of lime.

In order to bring this clearly before you, I have plotted on Figure 1, from information given in the United States geological reports, the annual production of lime, gypsum, natural and Portland cement. Line A shows the yearly production of natural cements; B, Portland cements; C, gypsum; D, lime, all in tons of 2,000 pounds. While the figures for natural cement, Portland cement and gypsum may be accepted without question, there seems to be reason to doubt the correctness of those given for lime for the years 1886 to 1895, inclusive; the rapid rise in production and equally rapid drop seeming abnormal. This, together with the fact that though given in the earlier government reports, the more recent ones omit the lime production for these years, makes me question their accuracy, although a letter written to the United States Geological Survey on the subject remains unanswered. I have therefore indicated by dotted lines what I believe to be the more correct curve.

A study of these curves show that from 1880 to 1895 the production of gypsum and Portland cement in the United States was small and showed little increase; that natural cement showed—omitting slight yearly fluctuations, a steady and constant gain proportionate to the increase in population. From 1895 the production of Portland cement and from 1898 that of gypsum began to show very rapid increase, while the production of natural cement and use of lime in the building trade show an equally marked decline in production; natural cement falling from over 1,382,000 tons in 1899 down to 214,000 tons in 1909, and the production for 1910 is estimated about half this amount. The falling off in the lime production is not so marked, but this is not due to use in the building trade, but to the growing market for lime in the chemical industries, as fertilizer, for filtration purposes, and other new uses. This is clearly indicated by Figure 2, which shows the yearly consumption of gypsum and lime in the building trade for the years 1905-06-07-08. In comparing the lime and gypsum curves in Figure 1 it is important to bear in mind that for gypsum gives the production of raw gypsum, and includes that used as land plaster and in the Portland cement industry, which consumes some 300,000 tons yearly. On the other hand, imports of gypsum are not shown. That these form no inconsiderable item is evidenced by the fact that the imports for the past five years average 376,407 tons per year. The dotted line, Figure 2, shows the total use of gypsum in building trade, including imports.

Turning to the lime curve, Figure 1, we find that in 1880 there was produced in the United States 2,800,000 tons, of which it is safe, I think, to assume 80%, or 2,240,000, was used in the building trade. In 1908 only 1,580,000 tons were so used, in spite of the fact that the population of the United States had increased from 39,135,753 in 1880 to 89,123,533 in 1910, and the use of cementing material, including lime, gypsum, natural and Portland cements, in the building construction from 3,182,000 tons to 12,641,000 tons. In other words, while the consumption of cementing material has, in round numbers, increased 400%, and the population almost doubled, the amount of lime used in the building trade has dropped from, say, 2,240,000 tons to 1,580,000 tons, or about 30%.

It is evident from these figures that unless the lime manufacturers by a concerted and united effort change the present tendencies, they will share the same fate, so far as the building trade is concerned, as the natural cement industry, which fell from a production of 9,868,179 barrels in 1899, and seventy-five operating plants, to less than 1,000,000 barrels at the present time, and possibly fifteen operating plants.

Analyzing the situation in an effort to find the causes of the decrease in the use of lime in building and engineering work, we find the principal causes to be:

A. Substitution of gypsum products for lime as a plaster.

B. Substitution of concrete for brick and stone masonry, doing away with a large portion of this class of work in which lime would be naturally used, and the substitution of cement mortar for lime mortar in the brick and stone masonry still used.

Considering these separately and in detail, we find that gypsum is supplanting lime as a wall plaster material not because its use makes the finished wall any cheaper, better or more durable (for you all know the contrary), but simply for the reason that the material is delivered to the work in a more convenient form to handle, and because by reason of its quick hardening it enables the completion of the work in a shorter time. To this possibly might be added the fact that the manufacture of gypsum products is in the hands of corporations with large capital, which enables them to employ modern methods in manufacture, reducing cost, and to advertise largely and carry on an aggressive sales campaign.

Given, however, a lime plaster possessing all the good qualities of a well-slaked lump lime, together with the added qualities of greater strength, resistance to the action of the elements, and greatly accelerated hardening, it seems unquestioned that gypsum can be driven from the wall plaster field.

The inroads of cement, however, will be more difficult to overcome—concrete is here to stay, and you must seek not to drive it out but to adapt lime for use in the same manner.

That this is possible is evidenced by the concrete construction of the Greeks and Romans still in existence after more than two thousand years. These, contrary to the general opinion, were not made from cement, but from mechanical mixtures of lime with puzzolanic materials, that is, a clay substance in which the silica and alumina are in condition to combine with the lime. Up to a recent date there has been no effort to develop or utilize similar natural puzzolanic material in this country, of which there are large known deposits, especially in the West, and experiment and search will doubtless

reveal many clays or shales having puzzolanic properties in the Mississippi valley and along the eastern seaboard, and practically all ordinary clays and shales may be given puzzolanic properties to a greater or less extent by roasting at low temperatures.

That Portland cement is a good constructive material is evinced by the rapid growth of its use, but it by no means follows that it is the best cement that can be produced, or that it should be used to the exclusion of all other cements, as seems to be the present tendency. The extensive use of Portland cement during the past ten years has developed that in spite of its good qualities it has certain faults and weaknesses which are causing many thoughtful students of cementing material to question the wisdom of almost universal abandonment of the use of other cementitious materials, and it may be that the time is coming for the backward swing of the pendulum to start; if so, the lime manufacturer must be ready to seize the opportunity and be prepared to place a substitute on the market, and it may be that Alca-lime-puzzolan cements will enable you to do this.

As many of you may know, Dr. Lasell and myself have devoted much thought and time to the study of the chemical and physical problems involved in the hardening of cements, in the endeavor to produce a mixture of lime and clay matter that would harden in the same manner as cement without the necessity of combining by calcination the raw materials and subsequently grinding them; even more time has been devoted to this portion of our research than to the production of a quick hardening lime plaster. How successful we have been in the latter effort you can readily judge from the exhibit in room 145, and from the practical demonstrations there, and from the statements of those here who are using our process commercially. Such being the case, I will not attempt any recital of the laboratory tests and scientific experiments that led to the development of the process, but will content myself with stating that while the basic principles of the invention were discovered and from a scientific standpoint demonstrated in our laboratory some time before, the past four years have been devoted to practical development demonstrations and tests of mortars made by this process; for before bringing this invention to your attention it was desired to be

absolutely sure of its commercial value. In this practical work we have been greatly assisted by the advice and counsel of the Charles Warner Company, who have been in close touch with our work for a number of years, and who took license under our patents in the early part of 1909.

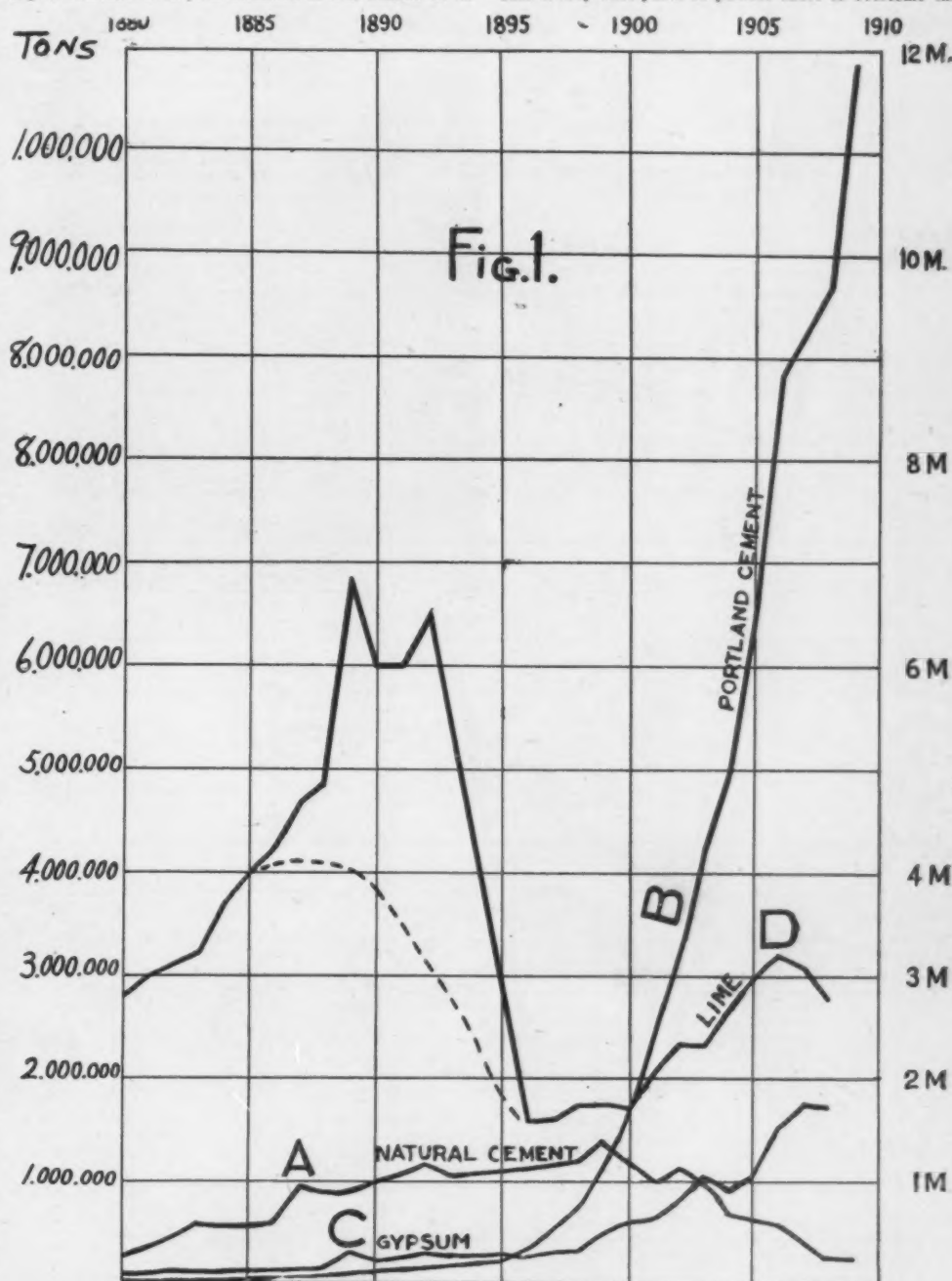
The first building to be plastered with Alca lime plaster was a small chicken-house at my home, the exterior of which was plastered. This work was done in the early spring of 1908. After this in the summer of 1908 the Charles Warner Company made several tests on a working scale in Wilmington, which were followed by a still more extended series of tests in the winter of 1908 and 1909, which were followed by still other tests on a large scale in the summer and fall of 1909. This work consisted of the plastering of a number of buildings.

Owing, however, to the fact that our arrangements for the commercial preparation and delivery of the Alca itself were not perfected until last summer, Alca lime plasters were not placed on the market for sale until September of last year, and though but six months has elapsed since their being placed on the open market, they are now so firmly established in Mr. Warner's territory that his company is confronted with the fact that they will have to increase their hydrating facilities to produce sufficient Alca lime plasters to meet the demand.

The Security Cement & Lime Company, who started the manufacture of Alca lime plasters last fall, give equally gratifying reports, and Mr. Cobb, of the Glencoe Lime & Cement Company, of St. Louis, Mo., whose Alca plant has only been in operation for about a month, reports an equally gratifying reception by his trade.

The experience of these gentlemen in widely separated territories demonstrates beyond question that Alca lime plasters are superior to gypsum products in every way; such being the case, the recovery of the plaster trade seems to be only a question of time.

Reverting to Alca-lime-puzzolan cements, these, as yet, have not passed beyond the laboratory or experimental stage, and their commercial introduction and use may meet with greater difficulties than has that of Alca lime plasters, for while puzzolan cements are the oldest of hydraulic cements, and their durability is unquestioned, Portland cement is so strongly entrenched that it may take years of patient effort to overcome the



ALL TENSILE TESTS, 1 PART CEMENT, 3 PARTS STANDARD OTTAWA SAND. RESULTS GIVEN ARE AVERAGE OF 3 OR 5 TEST PIECES.

Lab. No.	890	53090	1870	10080	8460	2820
Materials, parts by weight.	10 Al. 2 Pl. 88 Lime	10 Al. 2 Pl. 88 Lime	12 Al. 29 Lime 59 Clay	10 Al. 45 Lime 45 Clay	10 Al. 45 Lime 45 Ashes	10 Al. 45 Lime 45 Ashes
Fineness, 100	N. M.	N. M.	N. M.	99.8	N. M.	N. M.
Setting Time	.....	Hrs. Min.	Hrs. Min.	Hrs. Min.	.....	Hrs. Min.
Initial	N. M.	1 20	5	7 16	N. M.	1 30
Final	N. M.	24	7	7	N. M.	5
Tested under	T.	T.	T.	T.	T.	T.
Stored in	Air	Air	Water	Air Water	Water	Water
Composition of Test Pieces	1-3	1-3	1-3	1-3 1-3	1-3	Neat 1-3
24 hours	61	33	N. M.	N. M. N. M.	N. M.	70 58
7 days	101	55	105	122 21	N. S.	200 208
28 days	94	80	258	172 72	28	240 305
3 months	125	97	342	158 158	140	310 370
6 months	136	N. M.	390	145 263	188	305 390
9 months	190	107	N. M.	160 377	275	N. M. N. M.
1 Year	210	100	365	... 410	315	N. M. N. M.
18 months	...	201	...	...	...	...
2 Years	...	243	...	...	...	...

Abbreviations:—Al., Alumina; Pl., Plaster; N. M., Not Made; T., Tension.

advantages of the present position, among which I may mention large capital, perfect organization of technical and manufacturing forces, publicity and sales departments, and hold on the popular mind. I believe the next ten years will see a gradual development of the use of puzzolanic cements, particularly in building construction, in those parts of the country where cement is expensive and puzzolanic materials abundant. Some idea of the strength developed by these cements may be gained from the following table of tests.

In conclusion I would point out that while the cost of production and sales price of cements and gypsum products have been greatly reduced since 1880, on the average it costs almost as much to produce a ton of lime today as it did thirty years ago, and it brings practically the same price. If you would compete with the gypsum and cement products you must follow their example and adopt methods for reducing cost of production, for it may be taken for granted that neither the gypsum or cement manufacturers will surrender their market without a struggle, in which price as well as quality will play its part, and while in competition with

gypsum plasters you will have the advantage that one ton of Alca lime plaster will do the work of two tons of gypsum, thus saving in freight as well as in cost of manufacture. It is not reasonable that it should cost the lime manufacturer more to produce a ton of hydrate of lime than it does the cement manufacturer to produce a ton of cement when it is borne in mind that the cement manufacturer has to crush, dry, grind, cool and grind again the material, and that he has to handle the same quantity of stone to make a ton of cement as to make a ton of hydrate.

There was tremendous applause and incidentally the whole convention flew into a furor of discussion, so that even our president, with his energetic Virginia methods, could scarcely keep the meeting in good order. Practically every lime producer present expressed his interest and deep attention at the results of Mr. Spackman's clearly and scientifically and practically developed points.

Colonel Cobb remarked: "This is one of the things that we have been looking for."

Peter Martin allowed that it was a mighty good thing.

Lawrence Hitchcock admitted his deep interest in the invention, and many others expressed themselves in congratulatory terms over this good and progressive feature of immediate use for lime manufacturers in making their business achieve greater things.

President Carson then introduced A. F. Sheldon, of Chicago, the head of the Sheldon Business School, who delivered a lecture entitled "The Science of Business Building." Mr. Sheldon is a magnetic speaker, was well prepared, as usual, and delivered his lecture in a convincing and entertaining way. There were many present who doubtless appreciated the fine points of salesmanship which he brought out.

AFTERNOON SESSION, FEBRUARY 2.

The delegates filed into the convention hall promptly for the afternoon session, and taking up the gavel the president introduced L. J. Wightman, who addressed the convention on the subject of "National Advertising as a Function in Building Up an Industry." Mr. Wightman has made a study of industrial advertising and spoke from experience of his own and that of others. In developing his remarks for the propaganda of nation wide advertising is profitable and very desirable for such industries as the lime trade.

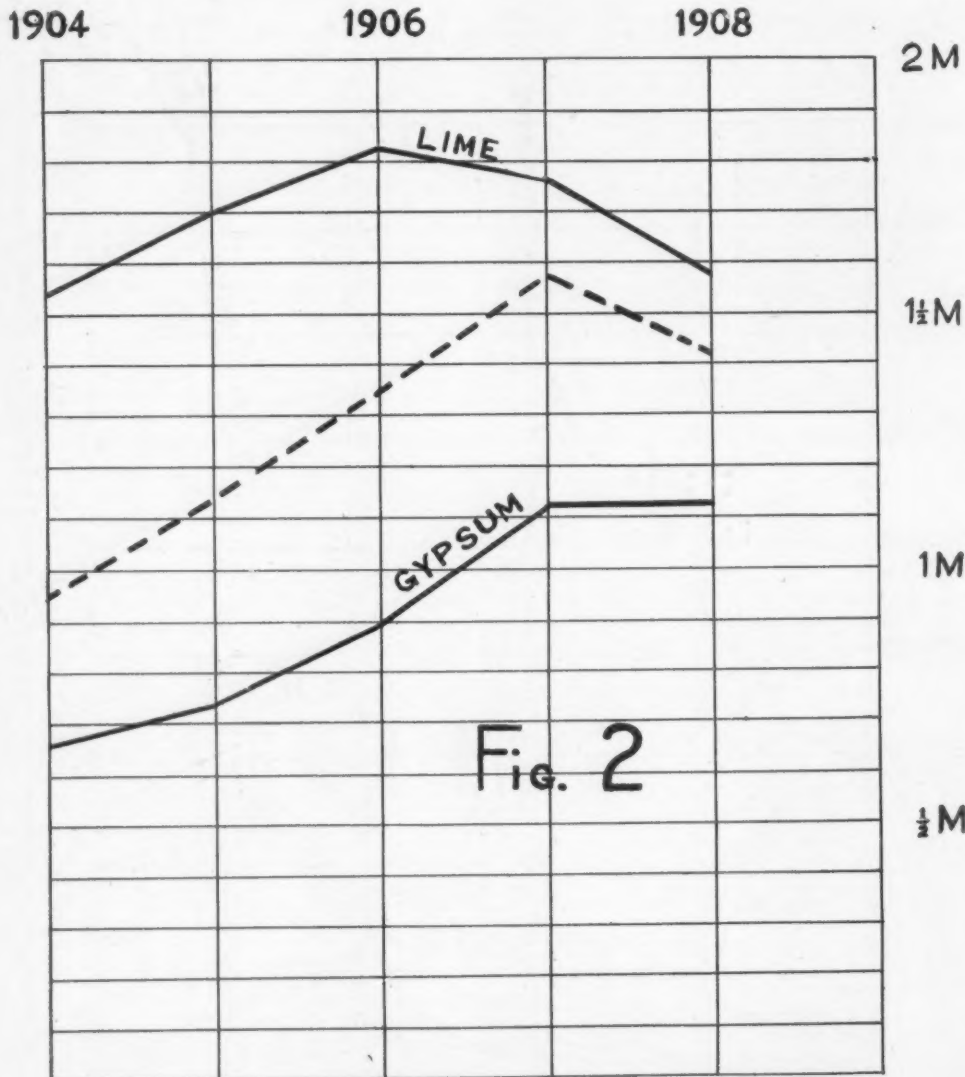
At the conclusion of this paper, A. A. Stevens moved a vote of thanks to Mr. Wightman for his able paper, and suggested that the subject matter contained in the same be referred to the committee for further action.

Professor A. V. Bleininger next presented his paper entitled "The Burning Temperature of Limestone." He discussed the subject from the theoretical minimum temperature at which limestone is burned, which is 880° C. or 1630° F. This is theoretical low burning temperature and would not separate the gases from the stone commercially. If the stone was pure, it would be all right to burn at such temperature, but the impurities, consisting of clay, iron, etc., take up or hold part of the lime and combine with it 6 or 7 per cent of impurities will take up about double of the amount of lime, and so it has been found that the lowest available amount of lime where the stone is 94 per cent calcium carbonate would become 80 per cent in fact as an oxide. This has been demonstrated in more ways than one in laboratory experiments. Thirty-seven samples of rock were taken, all about the size of a walnut. There were several pounds of each sample. Each of these were tested separately in the test kiln. Burning was begun at 800° C. and then raised 1300° C. so as to test the difference in the various kinds of lime and limestone. These samples were all first tested for porosity, specific gravity and the rate of slaking of resulted lime. Very great difference in density was noted. The higher the temperature at which lime was burned gave lower density in proportion, according to the impurities contained in the original rock. As higher temperatures are reached, the impurities begin to fuse and become smaller because less dense and at 1800° F. all the samples were burned thoroughly with the exception of a small amount of carbon dioxide still left in the stone. Porosity was demonstrated by soaking the samples in kerosene and noting the amount absorbed. It is a fact that each and every sample showed different results and this was exhibited by a diagram which showed the thirty-seven plotted curves.

Prof. Bleininger called attention to the fact that the temperature and porosity will identify each one of the samples and it would also indicate the place where the rock came from originally. Pure lime rock seemed to be the least changed, or rather remained unchanged. Tests were also made as to the rate of hydration of the different limes produced in this series of tests. Range of temperature for burning magnesium lime was found to be of much more narrow margin than that of burning pure calcium lime; 1000° C. or 1800° F. seems to be about the temperature for best results. It is easier to burn high calcium rock than it is to burn magnesium rock and for this reason one must be more careful to have the heats just right for burning dolomite, while variable temperatures do not cut so much figure in burning high calcium lime. The full text of Prof. Bleininger's paper has been reserved for the official proceedings of the association.

Mr. Carson wanted to know how about the estimated difference in the cost of kiln liners, or if anything of importance in this expensive item had been developed in the tests so far.

Prof. Bleininger: That is a matter for the refractory men to take care of. You know the clay



men have to get their living too, and the fire brick man is better prepared to take care of this trouble than we are here, perhaps. I would say that liners for lime kiln should be burned very hard, or about the maximum burn, so as to get the best service. It would take considerably more experimentation in the laboratories to prove out any conclusions in this direction. I would say that it would take a very good fire brick, possibly 57 per cent of silica and as high in alumina as possible. It must be burned so that if burned again it would show little or no shrinkage. It is the carbon monoxide that has the deteriorating effect on the refractories, but there must be little or none of these gases present, at least, it is negligible amount.

Irving Warner: We do get carbon monoxide for a certain distance up the kiln, either when we are using producer gas or when we are burning by the Eldred process. I believe that there is more than a negligible amount of carbon monoxide in all lime kilns.

Prof. Bleininger: Well, we all know that carbon monoxide is very hard on brick.

William H. Barton: I would like to know what percentage of iron particles might be allowable in the fire brick liners that we use.

Prof. Bleininger: I think that this would be hardly a fair question, for iron is always modified in one way or another. The mischief is done by the finely divided particles of iron. I will put a statement to cover this in the proceedings, and I think that 1.4 per cent would seem to me to be high enough.

Charles Ekstrand: I have made a series of practical tests of all kinds of refractories so as to make comparisons, and I have found that those having the most alumina and the least silica are the best for our use.

Mr. Sheldon moved that the thanks of the association be tendered to Professor Bleininger for his able and instructive paper.

Colonel Cobb was the next speaker, talking from notes that he had drawn up with reference to his experience with his Schmatolla installation of kilns fired by means of gas producers. As preliminary to his remarks, he explained the analyses of the rock from his quarries and the coal that he is using to gasify in his producer. The speaker referred to the lecture of Mr. Schmatolla before the association a year ago, and he remarked that up to the time of considering the gas producer there had been no settled opinion as to the best way of burning lime with coal. Coal itself varies a great deal and then the fireman is a very important factor in getting good results from the coal. The gas producer has been the subject of much discussion of this association and a little over a year ago the Glencoe Company installed two kilns which are supplied with producer gas from one producer, put into operation by Ernest Schmatolla, the famous German expert. The outfit was completed early last spring, but the coal strike in the Illinois field prevented very much satisfactory work of comparative nature being done with the outfit. However, under these unfavorable circumstances, the outfit is producing $3\frac{1}{2}$ lbs. of lime to 1 lb. of coal. There has been no difficult problem to overcome. The heats of the kiln have been controlled with ease, and the drawing of lime, once per hour, has been kept up regularly without any trouble. We have learned one thing, and that is that plenty of green rock is needed at the top of the kilns. When we had 1,200 bushels of rock at the top of the kiln, which was only occasionally done, we immediately found the output go up to $4\frac{1}{2}$ lbs. of lime to 1 lb. of coal. I am satisfied that producer gas will be the fuel for the future, and I consider that the most economical kiln will be the largest one that can be built, having automatic machinery to deliver rock at the top of the kiln, and also provided with automatic stokers to feed the gas producer. With such an additional investment we all naturally want the additional profit attendant thereto, and I believe there is money in the progressive things that this association has brought out, not the least of which is the gas producer. I do not believe in depleting good quarries by selling cheap lime. There is going to come a time when the available supply of lime rock will be a factor in the industry, just the same as the raw material of other industries. I forgot to mention that our kilns are 65 feet high, including the rock storage above the kilns.

George A. Nicholson: It looks to me as if there is a great future for the gas fired kiln. I have observed the same thing with reference to the smelting industries and the way they have succeeded in economizing their coal bills.

C. J. Curtin: I cordially agree with what Col. Cobb has said with regard to burning high calcium lime with gas producers. I was either the second or the first to start the use of the gas producer, and I have found that there is no better fuel on my kind of rock.

A. A. Stevens: I would like to know what is the output of gas producer kilns.

C. J. Curtin: Sixty-five lbs. per day average per kiln (300 lbs.), $3\frac{3}{4}$ lbs. of lime to 1 lb. of coal. My kilns are $5\frac{1}{2}$ ft. in diameter and are what are known as oblong kilns, each having four fires, and we fire three kilns with one gas producer.

Col. Cobb: At our plant, one man handles the coal and draws the lime. Our average for 30 days was $4\frac{1}{2}$ lbs. lime to 1 lb. of coal. The man who can do this must be trained for the purpose.

C. J. Curtin: My observation is that gas economizes the fire brick liner trouble, and the product is in every way as good and clean as wood burned lime.

A. A. Stevens: I am still in the woods, and I think what is needed is a comparison of the various rocks that we burn so as to find out what the results really are. Now, I get $3\frac{1}{2}$ lbs. lime to 1 lb. of coal with common coal firing.

President Carson: The United States Bureau of Standards are now working up this very problem, Mr. Stevens, and if you will take the matter up with Dr. Stratton at the laboratory tomorrow, I think you can possibly get an answer.

Charles Ekstrand: We have often had this subject up and have tried many comparisons, with varying results. You can take this as a basic principle: Mechanical results depend on the way it is run after it is installed. I have seen some very careless connections of air ducts and steam injectors



C. W. S. COBB, GLENCOE LIME & CEMENT CO., ST. LOUIS, MO.

and the like, where there was much waste. Fully as much waste can be charged to carelessness as was gained in efficiency by the mechanical appliances.

Peter Martin: We have used the gas reducer at Gibsonburg for several years and find the results are about the same as when we were burning with coal. In the past we have used natural gas, in fact, we are using natural gas at Marion now, and it costs about \$1.75 per 100 bushels of lime, paying 10 cents per 1,000 cubic feet for natural gas. We use a little steam to prevent case-burning. By case-burning, I mean an incrustation that comes on the lumps of lime when the heat of the kiln is too dry.

A. H. Lauman: There are plenty of gas producers on the market and almost any of them will make producer gas. The point is the application of the gas to the kiln from the gas producer. We are burning lime in sixteen kilns with three producers at Gibsonburg. We use two firemen and one coal wheeler, one man whose only work is to attend to the gas and one more man on the floor who does the drawing. We find that six or seven kilns can be run with one producer. Our average efficiency for the last year has run from $4\frac{1}{2}$ to 5 lbs. of lime to 1 lb. of coal, and it may be that it ran a little below 4 lbs. sometimes. We consider the gas producer the only correct thing because we always have the heats of our kiln perfectly under control. We can run the flames up to the top of the 30-ft. kiln, if we would care to do so, and the repair bills of our kilns amount to very little. We burn 17,500 lbs. per kiln per week, and do not force the burning at all. We use run of mine coal from West Virginia. Gas producer kilns are expensive. I figure about \$5,000 per kiln investment, and experience has taught me that from five to six foot

diameter round kiln are the best form. The first kilns we put in at our plant were 25 feet high. The last ones we built are 30 feet high. In my opinion, the attention given to the machinery and the equipment is the main thing in getting the product right, as well as the cost.

William B. Irvine: For more than thirty years I have believed in burning with producer gas, but I have found both fools and knaves to present the same to the lime industry. In our experience the supply of air to be mixed with the producer gas is the main problem in getting the proper control. Just what it is, I am unable to say, but we have found out the right path by constant experimentation.

At this point, President Carson introduced G. W. White, of the R. I. Wood Company, Philadelphia, who read his paper, entitled "The Theory and Phenomena of the Gas Producer as a Piece of Apparatus and as Applied to the Lime Kiln."

Mr. White said he was a student of the lime men's problems in connection with the burning proposition, and stated that he realized that gas firing was not as yet fully standardized and that there was a great deal of work to be done before it could be completed. He explained the mechanism of the gas producer, as well as the principle on which it works in the utilization of volatile gases of the coal, and also dwelt at some length upon the various ways by which the gas could be introduced into the lime kiln. He stated that the matter contained no new ideas at all, but that it is simple enough, containing the factors of fuel, air and apparatus, all well understood, but the detail of proportion of these factors was yet to be completed.

Irving Warner: We can talk now from our experiences with the gas producer. We first applied the producer to an old kiln and found that we had to learn how to use it. We found that we had to get a man who thoroughly understood lime burning, as well as how to use producer gas. We have a kiln that averages 53 tons in 24 hours. It is a large kiln and we use all the gas made with one producer in it. We find that it is much better to have considerable excess of gas because, in that way, it is easier to control. We have never built any purely Schmatolla kilns, but have built what we call a modified Schmatolla kiln, introducing some of our own ideas in its construction. In the men we are teaching, we are really developing a new trade, for there are no men who are qualified to handle a gas producer and burn good lime. It is easy to borrow a producer expert, but they cannot make good because they do not know lime. The development is going to raise lime burning to a higher plane, calling for a better class of workmen. One thing is certain, the night man cannot go to sleep when burning with producer gas. We use run of mine gas coal having about 30 per cent of volatile matter and low in sulphur. The purchase of coal is a little problem in itself to get it cheap enough, and the lowest priced coal is not always the cheapest for the purpose. We consider that coal should not have more than 1.5 per cent sulphur in the coal for use in a gas producer. At our lime works we have all kinds of kilns. Some of them are 40 years old, and we get $3\frac{1}{2}$ lbs. of lime to 1 lb. of coal in some of these direct fired kilns. High calcium rock seems to be more economical to burn with producer gas than dolomite, because the burner does not have to be so careful about the regulation of heats.

In the absence of Charles Weiler, President Carson read his paper entitled "The Folly of Price Cutting." This paper, as might have been expected from its author, was a little literary gem and dwelt upon the prevalent follies that have cost lime manufacturers in the past quite a tidy sum with the bad practice of trying to sell all their lime, all the time, to all the customers in all the world. Mr. Weiler's paper again referred, in no uncertain terms, to his former recommendation, that it was altogether possible and feasible to organize the "Consolidated Lime Company of America." While the paper was written in a happy and comic vein, it was altogether in earnestness as to the recommendations it contained.

In the discussion of Mr. Weiler's paper, Messrs. Peter Martin, W. S. Sheldon and A. A. Stevens responded at length, supporting Mr. Weiler's ideas.

At this point the president took occasion to introduce to the association a distinguished visitor in the person of Ex-Governor Wm. Cobb, of the State of Maine. He is a brother of our worthy and popular treasurer, Colonel C. W. S. Cobb, of St. Louis, and in boyhood was connected with the lime business at Rockland and Rockport, Me., where his brother also got his initiation into the lime indus-

try. The honorable gentleman made a few polite and pertinent remarks in acknowledging the courtesy.

MORNING SESSION, FEBRUARY 3.

President Carson called the meeting to order promptly and asked for the report of the Nominating Committee. The report was immediately presented by Chairman W. S. Sheldon, and read by the secretary, as follows:

For president, W. E. Carson, Riverton, Va.; vice-president, J. King McLanahan, Hollidaysburg, Pa.; second vice-president, H. A. Buffum, Rockland, Me.; third vice-president, Geo. E. Nicholson, Manistique, Mich.; secretary, Fred K. Irvine, Chicago; treasurer, C. W. S. Cobb, St. Louis, Mo. Executive committee consists of William E. Carson, Charles Warner and Walter S. Sheldon. This ticket was unanimously elected.

Mr. Sheldon, as chairman of the committee of resolutions, then read the following tributes to the two departed members of the association:

LIME MEETING—REPORT OF COMMITTEE ON RESOLUTIONS.

A. NEWTON.

Since our last annual meeting one of our charter members, Mr. A. Newton, of Chicago, has passed away and his genial presence and encouragement will be deeply missed by all our membership.

Mr. Newton was the first president of the National Lime Manufacturers' Association, and how much we owe to his enthusiasm and initiative in the organization of the association and his untiring efforts during the initial administration only those who were closely associated with him at that time can fully appreciate.

As an engineer Mr. Newton was one of the first to bring to the lime trade the professional attainments that have lifted the business into modern methods and given new scope to processes of manufacture.

Mr. Newton was not only lovable in his personal characteristics but he was a type of business man, broad, optimistic, and with an interest in the welfare of all those with whom he was associated and a personality that carried into business the highest ideals of manhood.

We shall sorely miss his presence and his advice in our trade gatherings, and in token of our profound esteem for him as a man and an associate, these resolutions are ordered entered upon the minutes of our association and a suitably engrossed copy thereof forwarded to his family.

F. C. LAUR.

During the past year one of our earliest members, Mr. F. C. Laur, of Rochester, N. Y., has passed away.

Mr. Laur was a well-known figure at all our national meetings. His interest and enthusiasm for association work, his genial presence and his active interests endeared him to all of our membership.

Our association adopts these minutes of respect to his memory and same are ordered entered upon the minutes of the association and an engrossed copy thereof to be forwarded to his family.

WALTER S. SHELDON, Chairman.

These resolutions were accepted by silent rising vote, after which Colonel Cobb took the floor and delivered an able and eloquent eulogy of A. Newton, who was the first president of this association.

Prof. Cyril G. Hopkins, of the University of Illinois, next discussed the subject of "Soil Fertility and Its Relation to Continued National Prosperity."

Professor Hopkins began his remarks with some startling figures. He showed that agriculture as a science depends upon the fertility of the soil, and that it is the feature of human endeavor which supports life. The population of this country has increased in the following ratio: in 1810, there was seventeen million people in the United States; in 1870, there was forty million people; in 1910 there are ninety-two million, and it is easy to estimate from these figures that in the year 1940 there will be one hundred and forty million people, all of whom will have to be provided for and fed by the products of the soil. When one looks at the abandoned farms of the east and the shortage of grain crops in the grain producing areas, the importance of acting intelligently to the upbuilding of the agricultural interests becomes apparent. The only way to feed our present population is to increase the acreage of food raising farms, for the average of grain crops has not kept abreast with the growth of the population. The increased cost of living really comes down to the problem of raising sufficient food to support the population. It is a matter of fact that the farmers of the Roman Empire, 2,000 years ago, were better instructed in matters of scientific farming than is the modern American farmer. In spite of this, they got down to the place where one bushel of seed wheat would only raise four bushels in the crop. Much thought and study has been given to the art of agriculture as developed in practice, but the science of agriculture still remains almost unknown. Farming is not a highly remunerative business, but it makes a living for the farmer and a low rate of interest on his investment. Agriculture must be reformed and improved or it will soon be everlastingly too late. The profits of agriculture depend upon the power of the soil to supply the crops with plant food, and this supply must be carefully safeguarded. Stimulants, like some of the commercial fertilizers, really leave the soil poorer than it was before, and this is the principal reason

why farms are ultimately abandoned, for just as soon as the seed fails to reproduce itself, it becomes an impossible proposition. Phosphate rock, lime rock and leguminous crops to store up crop-making qualities in the soil are the greatest essentials. There is great need of more general intelligence among people of influence in regard to the permanent farming and care of farming lands. As a matter of fact, our present idea of farming is more of a mining proposition by which the crops, from year to year, draw out the resources of the soil itself. The reports of the Government Bureau of Soils are to the effect that the soil automatically renews itself and will always continue to produce crops. This is wrong and ruinous and destructive of the principle of conservation which is now becoming more important with each succeeding season. In this particular, the Soil Bureau of the United States Department of Agriculture is in error and proceeding upon a foolish program, which can have nothing but disaster in the end, and whether purposely or otherwise, this program has continued for several years. It is high time that the dissemination of such false information should be summarily stopped. The speaker appealed to the lime producers of the country, both personally and as an association, to assist in arresting the false teaching of the Government's agricultural department in this respect.

President Carson introduced a discussion on the subject of "Lime for Agricultural Purposes and



A. A. STEVENS, AMERICAN STONE & LIME CO., TYRONE, PA.

the Best Method of Applying the Same," in which Messrs. Cobb, Stevens, McLaughlin and Hitchcock took part ad libitum.

Prof. E. O. Fippin, of Cornell University, next contributed his paper entitled "Some Phases of the Lime Problem as Applied to Soil Improvement." This paper dwelt upon the technical features of soil corrections and the relative values of lime derived from the various kinds of lime rock and in the method of its application to the soils. The paper contained a great many good points, among which were that lime promotes the formation of soil humus, lime is best applied to the soil when it is in its state of finest division, lime should be added only in its equivalents of what constitutes to replace the needs of the soil itself. Powdered lime or powdered limestone may be stored indefinitely. It does not stop the soil action at any stage. The form in which the lime is made to reach the soil is a matter of the most economical way of handling it. When ground lime is quoted at \$3.80 per ton, hydrate at \$5.50 per ton and pulverized limestone at \$3.30 per ton, it is cheaper to use the lime. On the contrary, on a variation of this price, it might be more advisable to use one of the other forms of lime. It is important that caustic lime be put on in the winter time to overcome the toxic action and other objections, which are deleterious to the growth of young plants.

Irving Warner followed this paper with a discussion, entitled "Lime's Position in the Chemistry of the Soil." He said that there was so much division of opinion of experts that it was hard to determine really what would be the most truly correct idea of soil treatment. He enumerated the eight indispensable soil elements and went into an exhaustive discussion of soil formations and their variation. He explained that there was no wide divergence or contention between two kinds of lime rock for the use of fertilizing.

At this point, A. P. Hachtmann related the experiences of the treatment of a farm in Lehigh county, Pa., in which very finely ground lime rock had been used in connection with a prepared fertilizer; 2,700 lbs. of this material ground so that 85 per cent of it will pass through 200 mesh sieve was distributed evenly over each acre of the land. This finely divided material gave the very best results in this particular instance. The experiment is being continued and they are using various degrees of fineness in the grinding operations.

Irving Warner resumed the discussion by saying commercial potash is obtained in many forms, ashes and the like, and the farmer loses a large part of the possibilities of his soil if he does not lime it intelligently and raise leguminous crops.

President Carson remarked that all lime men agreed on the important points of the use of lime. It is only in the details that there is any disagreement, and the pith of the discussion is that we want to get at the best way to get the lime to the soil for the highest results.

Irving Warner suggested that a committee on agricultural uses of lime be appointed to cover the whole field and to make practical tests and tabulate the results.

Mr. Sheldon seconded this, and further suggested that the committee on agricultural lime be instructed to watch the course of legislation and act in every way to promote the use of lime for agricultural purposes, the same committee to consider themselves a publicity bureau to cover all kinds of lime.

Prof. Hopkins requested that the name of this committee be "Committee on Agricultural and Vocational Education," and this was adopted without objection.

AFTERNOON SESSION, FEBRUARY 3.

The last session of the convention was called to order, and Warren E. Emley, of the United States Bureau of Standards appeared with his paper entitled "Preliminary Results of Tests of Lime for Plasticity, Crushing and Tensile Strength, Sand Carrying Capacity, Color, Hardness and Constancy of Volume, Rate of Hydration, Carbon Dioxide Content." Mr. Emley remarked that the quality of lime is now an important feature and the adoption of standard specifications becomes all the more important as the study progresses.

At this point, President Carson introduced Dr. Stratton, director of the United States Bureau of Standards, who remarked that the application of science to business is becoming more and more effective and he felt that the progress that had been made in the study of lime had been gratifying and he would be glad to have the committee of the association co-operate with the Bureau of Standards so as to assist in making possible a wider range of work in this important industrial direction. He expressed the intention to devote from the appropriation at his command double the amount of money that had been used in the past year to support the study of lime resources of the country.

Mr. Sheldon moved that the chairman appoint a committee to co-operate with the Bureau of Standards, as suggested by Dr. Stratton, and this was unanimously carried.

Mr. Emley, continuing, explained at some length the methods that had been adopted as the fundamental path by which lime tests would be officially conducted so that all tests could be compared one with another. The test of the content of carbon dioxide, the rate of hydration, etc., are quite as important with regard to lime as they are to cement. Plasticity, constancy of volume and viscosity are all qualifications which should be standardized and considered as qualities of the commercial lime of the country. Mr. Emley had prepared several tables showing the analyses of thirty-eight samples of lime rock from thirty-eight different quarries, scattered through the United States. The second table showed the per cent of carbon dioxide contained in each sample. Another table showed, by means of plotted curves, the rate of absorption of carbon dioxide of each and every one of the thirty-eight samples. Another table showed the strength of lime as expressed in mortars, showing density, shrinkage, crushing resistance and tensile strength. The speaker explained the variables in each of the tables and showed comprehensively the extensive work that had been done with the samples shown. When sand is mixed with lime in mortar, the outside film of the lime soon becomes calcium carbonate. Air gets to the lime inside of the mass by passing through the sand and becomes carbonated or hardens thereby.

Mr. Bachtenkircher remarked that cement concrete made with limestone sand, such as is found in the Chicago district, is much stronger than concrete

made with sand, but that he did not believe such was the case with lime mortar.

Richard L. Humphrey said the use of sand and crushed limestone in cement or lime mortars is largely a matter of stopping the shrinkage, and when all the voids of the mortar are filled, it is the most perfect mortar. Rocks and sand are good or bad in the different sections, and their value for mortar or concrete depends on the hardness and durability of both.

Mr. Barton: A fine division of the particles of the aggregate material helps to form the carbon crystallization. Hardness and fineness certainly have much to do with making perfect mortar.

Dr. Lazell: It is well to observe in the tables shown that all of the samples of mortar have a much higher strength than could ever be needed in practice.

President Carson next called for Mr. Bachtenkircher's paper, which he read as follows:

THE DEVELOPMENT OF HYDRATION IN 1910.

BY H. E. BACHTENKIRCHER.

The development of hydration in 1910, in plant and machinery, has been almost exclusively along the continuous process. No new batch hydrators have been placed on the market, and so far as known to the writer, no important installation of any existing types have taken place.

As was predicted last year, larger cylinders have been added to the continuous type machine, and more of them, giving greater travel for the material in the machine, with larger output and lower temperature during hydration. Also the use of a grinding mill instead of screens, is being adopted in recent installation. It having been observed that hydrated lime through a grinding mill possesses greater plasticity than hydrated lime, simply screened or air-separated.

This observation led to some investigation from the writer of how it is possible to so change hydrated lime in grinding as to increase its plasticity. Just here let me digress a moment. All are aware, I presume, that a 1 to 3 mortar, or a 1 to 5 made from hydrated lime putty will show a greater strength than the same proportionate mortar from lump lime putty. However, the explanation for this phenomenon is not so easy. Suffice it to say, however, that the earlier strength of any straight lime mortar is developed by the shrinking of the lime paste therein, on giving up its water, so that the binding of the sand grains is purely a mechanical one. Now when lime is dry-hydrated, let us suppose that, instead of each molecule or particle of lime combining with a single particle of water, three or four or possibly a dozen particles of lime unite with an equal number of water, simultaneously, if you please. Then instead of a single though larger molecule in the one case, we should have a cluster of possibly burr-like formation, or a group of particles crystallized or bound together in some way. It can be readily understood by means of this hypothesis, why dry hydrated limes should give mortar of greater strength, because they possess not only the binding action of the shrinkage of the lime putty as a whole, but also the internal shrinkage of these groups or clusters of particles. It may be asked here, why does not this clustering action take place in the ordinary mortar box? Possibly it does, but its action is lost or nullified by the excess of water present, which permits diffusion and breaking down of these clusters so that their shrinking action is fully completed by the time the mortar stage is reached.

The greatest development of hydration in 1910, however, has been along the line of widening the market for hydrated lime. It is here that the most development must take place in the future. Perhaps the greatest step toward progress in this direction is the great amount of work that is being done to make a prepared wall plaster from hydrated lime. In this field two essentials stand out most prominently to the writer, viz.:

1st. Plasticity. The plasticity of the final product must approximate that of the old-fashioned lime putty, which as yet the average hydrated limes do not.

2nd. Drying qualities. To my mind quick drying qualities are more essential to a successful wall plaster from hydrated lime, than high initial tensile strength. There never has been any fault found with the strength of old-fashioned lime mortar after it was dry. The kick has all been in drying. This is the one advantage gypsum has over lime, viz.: that the amount of water necessary to make it into putty is just about the amount required for the crystallization of the plaster, hence when it is set, the water is gone and the plaster is dry.

This action is impossible with lime putty, so some other material must be incorporated which has the property of either absorbing quantities of water and remaining fairly dry, or will actually combine with the water in some such fashion as gypsum. A substance of the latter category is more liable to be found, and if it does not in some other way affect the mortar, there is no reason why the problem should not be considered solved. Too much stress in experimenting has been laid upon the strength to be developed and too little attention paid to the real essentials. The writer can name several materials which will increase the strength of lime mortar quite materially, but even so, the matter of a successful wall plaster to the trade is just as far removed as ever.

About six months ago the writer started some experiments on making a light colored hydrated cement. Several processes were tried with varying results and much time was wasted trying to procure raw materials free from iron. It occurred that if some way could be found of getting rid of the iron that is ordinarily in natural cement, a good quick setting light colored cement would be made. There are several chemical processes which can be used to accomplish this result, and some natural cement was taken and the iron eliminated. Upon analysis this cement, which has shown an alumina content of 8%, showed almost none—the alumina was gone as well as the iron, and upon hydration we had a cement containing about 17% silica, 73% calcium oxide and 10% water; in fact, it very much resembled the imported Grappler cements of which La Farge is a type. This cement set quickly, gave a high tensile strength in air and worked very plastic, considering its nature and quick set.

Mixtures of this cement and hydrated lime were made by grinding the two together in a tube mill, and all test pieces gave uniformly good results; in fact, this

hydrated cement mixed half and half with hydrated lime gave a strength in an air-tested mortar equal to the original natural cement untreated. With this hydrated cement mixtures with hydrated lime can be made to give almost any strength desired, but the mixtures as prepared commercially do not possess the plasticity they should to successfully fill the bill as wall plaster. Then, too, while the set is quick the mortar does not dry out fast enough on the wall. However, these experiments with the natural cement along these lines of hydration are just in their infancy and there is no doubt in my mind that further work in this direction will show some still more startling results.

In every case in these cement experiments it was found that—

First—The lower the alumina and iron content of the cement could be reduced, the more uniform the results in working with hydrated lime.

Second—The closer the final analysis could be made to approximate the formula, silica 20%, lime 80%, the better and more complete the hydration of the cement together with maximum strength.

Third—That whereas natural cement straight, before hydration, with high alumina contents, as they usually run, are practically not to be depended upon when used above ground or on interior walls as wall plaster, this hydrated cement with the alumina and iron reduced to almost nothing, shows a constant and positive gain in air mortars with no signs of disintegration.

I regret very much that I cannot go more into details regarding these experiments, but, as stated before, it was only recently that this work has been taken up,



PETER MARTIN, HUNTINGTON, IND.

and while we have established some facts regarding this hydrated cement, yet we have a great many tests under way that are not completed, and the writer's experience in the lime business has been that it is not very satisfactory to predict; results are what count.

Dr. E. W. Lazell had his paper prepared in pamphlet form and refrained from taking up the time of the convention to read the same, but handed each member a copy. Supplementing this action, Dr. Lazell said that he had a few remarks to make on the subject of "Alca," which material he had devoted a great deal of laboratory work and study to bringing it to its perfect state. His remarks were about as follows:

"Alca" is nothing but calcium aluminate which has been mixed with water. It enters the colloidal state and hardens. Lime mortar hardens by the process of drying out. Gypsum takes up water into crystallization. With "Alca" the colloidal substance holds the water until the plaster sets or hardens. The tests of lime mortar have been made very carelessly or not at all. It is only within the past few years that much work has been done in the subject of "Alca," and by this knowledge has been developed. It has been observed in the laboratories that two briquettes, one made from hydrated and the other from lump lime, were much alike. The Doctor called attention to the fact that "Alca" plasters mixed with hydrated lime always gave a higher test than the same lime not hydrated, when tested in the same way. This brought up some more discussion and interesting talk on the subject of "Alca."

The convention now adjourned sine die.

NOTES OF THE CONVENTION.

The Urschel Bates Valve Bag Co. had an exhibit of their automatic bagging machine, in charge of Mr. Pierce, who is well and favorably known to all the lime manufacturers, and especially those who are

operating hydrating mills. One feature of the exhibit was a list of the users of the Bates Valve Bag, and one of the wags of the convention remarked that it looked like a list of Rock Products subscribers. In fact, the room containing the exhibit was so cosy and inviting that it was the popular resting place between the sessions of the convention.

Another exhibit was that of the Aluminate Patents Co., of Philadelphia, where a number of booths had been built with wooden lath, metal lath, and various kinds of hollow tile. Each of the leading hydrating operators had been requested to send a bag of lime and the Aluminate Patents Co. furnished the Alca and the sand. Plastered surfaces were shown in finished Alca plasters and each of the lime producers had an opportunity of working his own lime. Pop Lauman of the National Mortar and Supply Co., took the trowel in his good right hand and made the best job of plastering to be seen. He is an expert both in the mixing of the goods and in the handling of the tools. The professional plasterer did most of the work and he said that each and every one of the first, second or finished coats were all that good workmen would want, and he was very much delighted with the goods that he was handling. This exhibit was one of scientific significance and deeply appreciated by the manufacturers of lime, as well as the scientific gentlemen who were taking part in the great convention. The paper of Mr. Spackman on the subject of Alca was such a feature of the meeting that the exhibit became a constant source of interest to those who have been studying the broader and wider uses of lime and the means and methods to increase its importance in the markets.

EASTERN LIME NEWS.

Pittsburg, Pa., Feb. 18.—Prices of lime have been advanced about 15 cents a barrel here since February 1. The trade seems to sustain the raise fairly well and dealers do not look for any change in quotations for some time.

Miller, Mason & Co. will start their lime plant at Strasburg, W. Va., soon. They have little sympathy with the efforts being made to raise the price of lime, as sales are too hard to make at present.

The National Mortar & Supply Company is doing a splendid business in agricultural lime in spite of bad roads and deep snows from its big plant at Gibsonburg, O. Its plant has been thoroughly overhauled this winter and it is likely that four more kilns will be built in the spring. The company has re-elected the following officers for 1911: President and manager, A. H. Lauman; vice-president, Alexander Gilliland; secretary and treasurer, C. H. Stolzenbach; superintendent, F. J. Wer-telewski; shipper, H. R. Zorn.

DETROIT LIME NEWS.

Detroit, Mich., Feb. 16.—Business is booming at the plant of the Charlevoix Cement Co., in Charlevoix. One of the two lime kilns and the hydrator is running successfully and turning out forty tons daily. The total capacity of the plant will soon be reached, judging by orders on file. A branch railroad has been completed to the lime plant, and is now being extended to a point where a 104-ton crusher will be placed.

The White Marble Lime Co., of Iron Mountain, fired a big blast in its quarry in Schoolcraft a few days ago. Four thousand six hundred pounds of dynamite were used, and an immense amount of rock loosened. It was the greatest charge ever set off by the company.

WISCONSIN LIME NEWS.

Milwaukee, Wis., Feb. 20.—Henry W. Pipkorn, treasurer of the W. H. Pipkorn Company, prominent retailers of Milwaukee, died recently at the age of 34 years.

The Speaker Lime & Cement Company, of Superior, Wis., has been incorporated with a capital stock of \$10,000.00 by H. E. Speaker, W. M. Steele and L. A. Munroe.

The Sheboygan Lime Works, of Sheboygan, Wis., has purchased a new Kissel auto truck for delivery purposes.

The Vanderhoof Lime Company has its building started at Sussex, N. J., for the installation of a hydrating plant at their extensive works at that place. This is the second hydrating plant to be installed in that section of the country.

The property of the Anniston Lime & Stone Company, of Anniston, Ala., was sold recently at receiver's sale for \$50,000. The purchasers were A. J. Goodwin and J. W. Coner, Jr.

ST. LOUIS LIME NEWS.

St. Louis, Feb. 16.—"This time," said Secretary Healey, of the Glencoe Lime & Cement Company, "I can hand you some news. Do you see," said he, pointing to a poster done in flaming red ink by way of getting the optics of the representative of Rock Products directed to the same. Said poster informed all and sundry that the company was out with a new brand of lime, to be sold under the name of "Alca." "This," resumed Mr. Healey, "is the finest ever. It is a new hydrated hard wall plaster, principally of a lime base, mixed with other ingredients. There is no 'popping,' and it can be laid faster than ordinary hard wall plaster. We will put it on the market early in next month. At our Mineke plant we are putting in a new steam power plant, about 150 horse-power. There is beginning to be a pretty good demand set in for lime and we consider the outlook quite satisfactory."

The manager of the Ste. Genevieve White Lime Company is such a busy man that the Rock Products representative seldom happens to meet him at his office in the Mermod-Jaccard building. He evidently believes that the surest way to get business is to go after it. Of course it would be easier to call up folks on the telephone, but personal interviews nail more orders.

NEW LIME PLANT BUILT.

A new lime plant is soon to be established at West Stockbridge, Mass. Application for incorporation has been made and one lime kiln built, a second and larger kiln will soon be under construction. The firm is known as the Tobey Lime Company and the stockholders are Fred C. Tobey, Noble B. Turner and Albert A. Tobey, now representing the Owens Lime Company of Ohio.

SAND STRUCK BRICK COMPANY ELECTS OFFICERS.

The stockholders of the Mechanieville Sand Struck Brick Company, at Mechanieville, N. Y., held their annual meeting February 16. These directors were elected: Herbert O. Bailey, Thomas F. Hickey, William D. Wait, Stephen Lee, Melville L. Welling, George W. Clarke, James R. Smith, Norman W. Kelso, William D. Tweedy, M. L. Akin, Jeremiah Cleveland and Frank Stumpf.

TO BUILD ANOTHER LIME PLANT.

The New York and New England Cement and Lime Company expects soon to begin the erection of another large plant in Greenport, Columbia County, to be run in connection with the present mill at Catskill, N. Y. It will have a greater capacity than the plant which recently shut down.

Miller & Coulson report that the lime business is in good shape. They regard indications as first class and that with the recent advance in prices will be well maintained.

The Crescent Lime Stone Company, of Wampum, Pa., will shortly mine limestone from its holdings from Ellwood City, Pa., and abandon all its stripping operations. Engineers have been engaged to make ready for this work. The limestone bared by the stripping process is crumbling rapidly.

W. L. Pastner & Son, of Millintown, Pa., have recently installed a new complete lime grinding plant.

The four lime kilns of the Ohio & Western Lime Company, at Minndich, Ind., are being dismantled and moved to Genoa, O., where they will be put in operation.

The Anniston Lime Company has been incorporated at Birmingham, Ala., with a capital stock of \$20,000.00. The incorporators were A. J. Goodwin, J. W. Comer, Jr., and W. P. Acker.

Sand-lime bricks of high quality are soon to be produced in Farmington, Conn., by a Hartford concern, which is now installing the necessary machinery.

The Monarch Lime & Stone Company has been incorporated at Nashville, Tenn., with a capital stock of \$6,000.00. W. E. Thompson, Howell Turner and others are the incorporators.

Spahr Bros. have sold their lime kilns and quarries at York, Pa., to Charles Gise.

The Eau Claire Concrete Co., of Eau Claire, Wis., has purchased additional land for site purposes and will extend its manufacturing operations.

SAND-LIME BRICK

VICTORIOUS OVER FIRE.

Recently there was a disastrous fire in the city of Buffalo which destroyed the Brecker Building, which was a four-story brick, having an iron front with steel frame, while at the rear was a frame structure. The fire completely destroyed the building, and all that part of the walls which were built of clay brick were completely annihilated by the cracking and collapse of the material itself, while the sand-lime-brick wall, which is shown in the accompanying illustration, running the entire length and about two stories, right in the center of the hottest fire zone, was itself uninjured in any way. The wall of sand-lime-brick, after careful inspection after the fire was cleared away, was found to be in just about as perfect condition as when it was first built.

There can be no better practical endorsement of the value of sand-lime-brick as a fire-resisting building material. In fact, the claims which we have often made in these columns of the sand-lime-brick, that they are in many respects useful as fire brick in very many uses of the commodity, is hereby confirmed. It is to be remarked that very few buildings that have been constructed of sand-lime-brick have ever been subjected to the actual fire test.



SAND LIME BRICK WALL AFTER BRECKER FIRE IN BUFFALO, N. Y.

The case here cited is in all respects very similar to all others that have come under our notice, and we have been pretty well informed of all the fires that have occurred in connection with this particular material.

The wall shown in the reproduced photograph extended from the basement to the second floor. Above this level the partitions were of studding and lath, being all wood and steel construction from that point to the roof. It may be said that there was practically no salvage in the entire building except the sand-lime-brick wall.

MICHIGAN SAND-LIME BRICK.

The United States Geological Survey, in co-operation with the bureau of the census, has compiled statistics of the production of sand-lime brick in Michigan, in 1909, as follows:

County.	Quantity (Thousands).	Value.
Genesee	4,181	\$28,039
Houghton	3,241	29,013
Huron	4,247	25,575
Jackson	3,300	15,000
Kent	3,839	18,067
Macomb	40	320
Manistee	1,685	11,046
Menominee	976	5,466
Saginaw	8,288	44,589
Wayne	5,818	41,111

CHICAGO UNION LIME WORKS.

(Continued from Page 3.)

up, the members extending back to the rock face of quarry being let into notches being cut in the quarry wall and then being concreted in place. The working platform was then lowered and hung from this first section and, the second section put in place, being riveted up and the members extended to the quarry face, concreted as before and in a similar manner, the work was carried on until the quarry floor was reached, the steel all being lowered from the ground level and the work being carried on steadily and very rapidly.

A stairway was provided between the two cage compartments and the face of quarry wall for access to the quarry after completion, and the sections to this stairway were put in as each section of the skipway was completed, thus providing a ready means for reaching the work in progress at all times. The building of this skipway appeared at first to be a most hazardous job, but as worked out it became the most simple of jobs and was not attended with any unusual hazards at all, and it is a noteworthy fact to mention that there was no one injured in the slightest during any period of construction work.

The loaded cars upon arriving at the crusher level, which is some thirty feet above the street level, are run on tracks a distance of about twenty feet into the main crusher building, where they run onto automatic tipples and dump the stone directly into a No. 8 McCully crusher. A large portion of the company's product is burnt lime, and the stone for this purpose is taken from the same quarry. There were, therefore, provided turntables in the hoisting tower between the above mentioned tipples and the cageways so that the cars filled with lime for the kilns could be diverted and taken to the kilns over a trestleway running out alongside of the crusher plant.

The No. 8 McCully crusher, mentioned above, sets upon a high concrete foundation so as to avoid pits under the elevators. The crusher breaks the stone to about 2½" in size and the stone falls from the same to two No. 6 continuous bucket stone elevators, which raise the same to two 48" x 24' revolving screens set over the storage bins, these screens being provided with perforations to give the sizes required by the Chicago market. The smallest perforations in the revolving screens are ¾" in diameter, and all stones smaller than this fall to two 48" x 96" shaking screens on the floor below, which are provided with ¼" mesh screens and divide the stone into two sizes. Below the screens are the reinforced concrete storage bins, these bins being 40 feet in width by 46 feet in length and 26 feet in depth, and giving a total storage capacity of about 1,500 cubic yards. These bins are divided into twelve separate compartments and are supported upon reinforced concrete columns and girders and have running beneath them three roadways for loading wagons; the height in the clear of these roadways being 11' 0".

All of the stone produced in this plant is hauled to destination in wagons and the same is loaded into the wagons by gates provided in the bottom of bins.

The oversize stone from the above mentioned revolving screens is conveyed by 16" special belt conveyors to the crusher end of building and discharged into a small, round steel bin 4 feet in diameter and 30 feet in height, which has at its lower end two openings, from which the stone flows into two No. 3 McCully crushers, which are set to break the same to about 1¼" in size. The product of these crushers flows onto two 16" troughed belt conveyors set at a slight incline, which convey the same back to a point where it is discharged into the No. 6 elevators and thus raised again to the head of the plant for sizing.

The girders under the storage bins are 6 feet in depth, thus providing a tunnel under the bins, and in the two outside tunnels there are installed 16" special feeding conveyors, by which the stone from any of the bins can be taken back into the crusher building. These conveyors discharge directly into 42 x 16" crushing rolls and it is thus impossible to recrush any size stone contained in the bins to a smaller size. The product of these rolls falls to the 16" belt conveyors mentioned above, which also serve the No. 3 crushers, and through these conveyors and the No. 6 elevators it is raised to the screens for sizing.

The No. 8 crusher is driven by its own 75 H. P. induction motor. Another 75 H. P. motor drives the two sets of crushing rolls, two No. 3 crushers and the conveyors serving them, while a third 75 H. P. motor drives the revolving screens, shaking screens and elevators. The current for all of these motors being controlled from a switchboard located

on the main crusher floor level adjacent to the hoist.

The most advantageous location of the plant for the utilization of the property available, as well as for the hauling of the stone away from the plant in wagons, was in a triangular strip of land bounded on one side by Wood street and on the other side by the quarry. This necessitated making the plant very narrow, and in order to get the machinery in, it was necessary to build the plant in several stories. The locating of the hoist for operating the cages of quarry was one of the most important problems, and this hoist was finally located on the crusher floor level, about 30 feet above the ground line and directly back of the crusher hopper. The providing of a proper foundation for the hoist, as well as providing a fire-proof structure, as required by the city of Chicago, was secured by making the crusher building of reinforced concrete. The placing of the hoist on the crusher floor level also put all of the operations in view of the hoist engineer, which greatly facilitates the operation of the cage-way and plant in general.

As mentioned above, the storage bins are of reinforced concrete. The shaking screen floor is 9 feet above the top of storage bins and the revolving screen floor 8' 6" above this floor, and these two floors, together with their supporting structure and the outside walls, are of reinforced concrete. The balance of the structures of the plant are of steel, covered with corrugated iron.

Trolleys running upon "I" beams are provided over all of the crushing machines and other heavy machinery for use first in erection and later for making repairs, and the entire plant, in spite of the fact that it is located in such a small piece of ground, is roomy and accessible in every particular, but is at the same time so compactly arranged as to require very few men for its operation.

The plant is electrically lighted throughout, so that the operations can be carried on at night as well as day. Necessarily a considerable amount of water is caught in the quarry during every rain-storm, and for removing this there is provided a multi-stage centrifugal pump in the quarry, which discharges the water through a pipe line placed alongside of the skipway and terminating in the city sewer at street level. Compressed air for operating the quarry drills is furnished by an electrically driven air compressor located in a steel building alongside of the hoisting tower of the crushing plant.

Plans on this plant were commenced in July, 1909, construction work being started in November of the same year, but not pushed to any extent, as it was not desired to have the plant completed until late in 1910, as the old crushing plant was easily good for another year's service. The plant was completed and placed in operation in August, 1910, and has since been operated to capacity.

All of the concrete work was done under contract by the Pleas Concrete Construction Company, the steel structures were furnished and erected by the Kenwood Bridge Company, while the corrugated iron work was done by H. C. Knisley Co. The No. 8 crusher, elevators, crushing rolls and screens were furnished by the Power & Mining Machinery Company. The electric hoist for the cage-way, all of the motors of the plant and the multi-stage centrifugal pump were furnished by the Allis-Chalmers Company. All of the conveyors, shafting and pulleys, variable speed devices and bin gates were supplied by the Stephens-Adamson Mfg. Co., of Aurora, Ill. The cages were furnished by the Kilbourne & Jacobs Mfg. Co., of Columbus, Ohio, and the quarry cars by the Ormstein Arthur Koppel Co.

TEXAS QUARRY NEWS.

Austin, Texas, Feb. 16.—Plans are being made for the extensive development of the granite industry in the vicinity of Llano. Heretofore operations of some of these granite quarries have been retarded owing to their inaccessibility to the railroad and the inability of wagons of ordinary type to haul the larger pieces of stone. In order to overcome this difficulty C. C. Baker, of Indiana, is preparing to haul the stone by means of a gasoline engine and heavy wagons. The engine will be 40-horsepower and it will haul 15-ton wagons. This tractor train service will ply between the different quarries and the railroad loading yards. It is also planned to erect a large granite crushing plant near the railroad. When not occupied in hauling blocks of stone for shipment the tractor will be used to operate the crushing plant. This new transportation service promises to cause an impetus to the granite quarrying industry of that section.

An extraordinary amount of road building will take place in this state during the present year. Many large bond issues for this purpose have al-

ready been voted by different counties and others are proposed.

The development of mud-shell banks and the use of that material for the construction of roads in the Gulf coast region of the state is a growing industry and is bringing about the improvement of many highways.

The Galveston Good Roads Association was recently organized at Galveston for the purpose of bringing about the improvement of the roads of Galveston county and other parts of the upper Gulf coast section. This association will co-operate with the Gulf Coast Roads Association, which is promoting the construction of highways between Beaumont and Houston and Port Arthur and other points in the Galveston territory. Among the men who are taking an active interest in this movement for new and better highways in the Gulf coast territory are John W. Gates, the former Wall street operator, who now makes his home in Port Arthur, Colonel J. H. Hawley, M. O. Kopperl, Maco Stewart, J. W. Munn, Bartlett D. Moore, George Sealy, Marion Douglas and Sam J. Williams, all of Galveston.

The use of concrete for sidewalk construction has greatly increased in many of the towns of the state during the last few months. In San Antonio nearly ten miles of new sidewalks were laid in the past three months and the prospects are favorable for double that number of miles being laid during the ensuing three months.

The new Main street viaduct to be built at Houston will be 1,500 feet long and paved with vitrified brick. It will rest on reinforced concrete arches with strong retaining walls. Underneath it will carry a 15-foot water main, heavy gas mains, hydrants for protection of shipping and ducts for electric and telephone wires. Besides the viaduct, three huge sewer projects have been approved and bids for their construction have been asked by the city. These are the Calhoun street storm sewer, varying in width from 35 to 72 inches, and extending from Bagby street to St. Charles street, clear across the city and the Sap yards. The Washington avenue storm sewer to Decatur street to drain the section east of Glenwood Cemetery, and the Second ward pumping main which will be given an emergency consideration. This last sewer alone, it is estimated, will cost \$150,000.00. Filtration beds and sewerage reservoirs are planned in connection with these projects.

PENNSYLVANIA QUARRY NEWS.

Pittsburg, Pa., Feb. 18.—The Braddock Stone & Contracting Company has been organized by John E. McCune, William R. McGill and Frank J. Leah, of North Braddock, Pa., to do a general quarrying and manufacturing business in stone.

The Craig Stone Company believes that things are going to open up shortly, owing to an increasing amount of road work coming forward. It will start its quarries probably in March, after a thorough overhauling.

P. E. and P. J. McGovern, who recently leased the stone quarries west of Punxsutawney, Pa., are installing a big stone crusher there. The firm has the contract for paving several streets in that borough this spring.

The Susquehanna Stone Company will build a \$60,000.00 stone crusher at Aughenbaugh, near Jersey Shore, Pa., this spring. It is expected that the plant will be in operation by June 1, and will employ fifty men.

St. Clair borough has let contract to Ott Brothers Company, of Pittsburg, for paving Spring street five squares. Director Joseph G. Armstrong, of the Department of Public Works of Pittsburg, announces also that the widening and raising of West Carson street from Steuben street to McKees Rocks borough line will be started early in the spring.

County Road Engineer S. D. Foster has announced that 52 miles of new road were built last year in Allegheny county at a cost of \$13,206.00 a mile. The total mileage of improved roads in the county is now nearly 400. Experiments are being made with brick and other paving and a large amount of road work will be let shortly throughout the county. Much interest is also being taken by builders' supply men here in the material proposed for the state road which will run from east to west across Pennsylvania. The matter is now in the hands of the legislators at Harrisburg, and the prospects are that brick will be used.

Ellwood City, Pa., is to have another industrial plant, which means much to the road building interests of western Pennsylvania. Thomas McNeill, of Pittsburg, is closing a deal there for the location of a plant for making road dressing to be located near the Clydesdale quarries and brick works. Mr. McNeill has a special preparation for dressing country roads, asphalt paving and other kinds of paving.

It consists of limestone and other preparations and is placed on the roads after the paving has been put down. It is claimed that it will prolong the life of the paving many years.

The Toronto Fire Clay Company, at Toledo, O., will increase the capacity of its plant to 100,000 face brick daily. F. P. Cuthbert, Philadelphia, will be in charge at the Pittsburg office and William McCrady will be superintendent at Ekeyville, O.

The West Virginia Fire Clay Company has doubled the capacity of its plant at New Cumberland, W. Va., by the erection of an addition 60x120 feet and the installation of considerable machinery.

TOLEDO QUARRY NEWS.

Toledo, O., Feb. 20.—Undoubtedly the most important event of the early year has been the beginning of a strenuous campaign on the part of the France Stone Company, of this city, to acquire and control the crushed stone business of this section of the state. This company was originally a Bloomville, Ohio, concern, but which moved here some two years ago. Since that time it has been quietly taking over stone quarries as opportunity presented until now it is the king bee in this direction. It has just purchased an 100-acre tract near Sandusky, where a large crusher and other machinery is now being installed. A short time ago the properties of the Monroe (Mich.) Stone Company were taken over and the capacity of this is to be more than doubled. The North Baltimore Stone Company has just been organized by officials of the France company and this concern will develop several available stone properties near North Baltimore, Ohio.

CRUSHING MACHINERY WANTED.

The manager of a stone-crushing company in the far east advises an American consul that he wishes to purchase a machine capable of crushing the hardest rock. The English machinery now being used is not satisfactory, having worn out with three months' use. A crusher is wanted which can be guaranteed to last for one year, working twelve hours daily. The quarry produces 500 tons daily, the stone being crushed to a size suitable for ballast for the railways. An automatic stone driller is also wanted. Address No. 6165, Bureau of Manufacturers, Washington, D. C.

TRAP ROCK CONCERN TO REBUILD.

The plant of the Mount Carmel Trap Rock Company, at Mount Carmel, near New Haven, Conn., was destroyed by fire recently, and preparations are now being made to rebuild at once. The company has a \$50,000.00 charter, and has been operating extensively, getting out trap rock for railroad and building purposes.

STONE COMPANY CHANGES HANDS.

The France Stone Company, of Toledo, Ohio, has purchased a half interest in the property of the Bellevue Stone Company, at Bellevue, Ohio, and will operate this plant the coming season, and at the same time push forward the erection of a new and modern plant of large capacity, which will be in operation not later than the beginning of 1912.

GOOD YEAR FOR CRUSHED STONE.

The year 1910 was a successful one for the New Ulm Stone Company, at New Ulm, Minn. They commenced operation before April 1 and did not close down until the latter part of November. During the entire season they gave employment to an average of thirty-five men. A third crusher was installed during the year and a new quarry was opened. Six hundred and seventy-two cars of crushed stone were shipped out, the product going to various points in Minnesota, South Dakota and Iowa.

On account of the increasing demand for crushed stone, the business of the New Ulm Stone Company is rapidly growing larger. New Ulm crushed stone is gaining a wide reputation for its excellence. During the past year the New Ulm Stone Company furnished large quantities of stone for macadamizing purposes in some of the larger cities of Iowa, and it is predicted by those best able to judge that the time is not far distant when a large number of cities in the Northwest will be macadamized with New Ulm stone.

The Atlas Stone Company has been incorporated at Olive Hill, Ky., with a capital stock of \$15,000.00. The incorporators were J. W. Shumate, W. N. King and J. H. Mobley.

Petitions for paving thirty-five blocks are on file with the city clerk of Vinton, Iowa.

W. L. Pastner & Son, of Midlin, Pa., have just installed a very complete limestone crushing plant.

The village board of Silvis has decided upon paving work, which will approximate \$60,000, for next spring.

Henry Nelch & Sons, of Springfield, received the contract to pave East Edwards and East Jackson streets, Springfield.

Thirtieth street and Third avenue paving contracts aggregating \$24,000.00 were let to the Gust Ed Construction Company, of Moline, Ill.

The Crescent Limestone Company, of Wampum, Pa., will shortly mine limestone from its holdings near Ellwood City, Pa., and abandon stripping operations.

Ordinances call for the paving of Hickory street, Joliet, with bituminous macadam and vitrified paving blocks on concrete foundation, to cost approximately \$16,000.00.

The Keystone Quarry Company, of Wilkes-Barre, Pa., has been organized and will engage extensively in the quarrying and manufacturing of stone for road building and curbing.

The Ellwood Stone Company, of Pittsburg, reports the outlook excellent for spring work. Its chief product is dimension curb stone and rubble stone at its quarries in Ellwood City, Pa.

The Susquehanna Stone Company will shortly erect a \$60,000 stone crusher at its Aughenbaugh quarries at Jersey Shore, Pa. It expects to have a plant in full operation with fifty men employed by June 1.

The Brockschmitt Quarry and Construction Company, of St. Louis, has been incorporated, with capital stock of \$3,500.00. Incorporators: Edward Brockschmitt, Thomas M. O'Gorman and Bertha Brockschmitt.

The town board of Morrison, Wis., and the committee on bridges of the county board of supervisors is preparing to build a bridge of reinforced concrete. Elmer S. Hall is county clerk.

P. E. and P. J. McGovern, of Punxsutawney, Pa., have leased the stone quarry west of that town and will install a large crusher at once. This firm has the contract for paving Jefferson, Penn and Union streets in that borough.

The South Elgin Stone Company, of South Elgin, has been incorporated with a capital stock of \$20,000 to quarry and deal in stone, lime and cement. The incorporators are William Grote, Andrew Magnus and E. D. Waldron.

The Industrial Stone Company has been incorporated at Chicago to quarry stone and deal in building materials. Capital stock is \$30,000.00. The incorporators are Elija R. Ealy, Walter H. Roadifer and Dean H. Dresser, all of Chicago.

Involuntary petitions against the Nyack Trap Rock Company, with quarries at West Nyack, N. Y., have been filed by the Henry J. McCoy Company and two other creditors, with claims aggregating \$743.00. The assets are valued at \$6,000.00.

The Carolina Crushed Stone Company has been incorporated at Richland county, S. C., with a capital stock of \$15,000.00. They will operate the plant recently purchased from the T. A. Heise Stone Company. They have four acres of land to develop. Their daily capacity is from 400 to 500 tons of stone.

Watseka residents were surprised when the Fifth street paving contract was let to a syndicate of local property owners affected for \$17,264.00. The members, who filed their bid under the name of F. H. Gard & Co., are Mr. Gard, W. H. Hogle, H. J. Frith, Zed Watkins, H. T. Riddell, E. C. Hamilton, J. A. Bell and J. G. Williams.

The Upper Hudson Stone Company, of Marlborough, has been incorporated at Highland, N. Y. It is reported that it was organized to take over the business of the Cedarskiff Stone Company, whose plant has been idle so long, but the rumor was not verified. The directors are all of New York, and are: W. B. McKean, A. W. Mackintosh and Edwin C. Farlow.



CHICAGO SAND AND GRAVEL NEWS.

Chicago, Feb. 20.—News is as scarce as orders are this month in the sand and gravel business. Comparing the actual deliveries this month with those thirty days ago, it can be readily figured that trade is picking up. As the situation last month was practically dead and this month some business seems to be coming out, the dealers are all looking forward to a good year. Railroad buyers are getting out their requisition slips and preparing to buy much sand and gravel to be put into their new abutments and track work. This year has seen more building permits issued than ever before in Chicago during the corresponding length of time. As the new height limit on buildings will go into effect in about one month, builders are trying to get their plans filed to get in under the old limit of 260 feet. Prices are not good because the demand is slack, but this condition is to be bettered, the dealers say, as soon as the season opens up.

John N. Bos, of the John N. Bos Sand and Gravel Company, said: "Trade is very quiet with us when compared with the summer trade. The severe weather has influenced the builders to such a degree that they have nearly stopped buying. Prices are remaining about the same as they were last month. We have made actual deliveries of fifty or sixty cars this month, but do not reckon it as much business. Believe things will open up next month, as we are looking for the weather to moderate, and that is our barometer."

P. M. Lewis, of the American Sand and Gravel Company, reported trade conditions with his firm as follows: "This is always the dullest month in the year. The terms snow, bad weather and poor business are synonymous. We find, however, that the outlook is exceedingly bright. I have never seen so many proposed skyscrapers as are going up in the 'loop' this spring. Business will in all probability start about the middle of March or the first of April. The fact that there are so many going up at once will have a strong bearing on the price of sand this spring. They will all want material at the same time and the demand for a while will be greater than the supply. That's when we do business."

The Lake Shore Sand Company has been incorporated at Chicago with a capital stock of \$4,500.00. They will operate in Indiana. J. S. Putney is president.

Charles J. E. Anderson, sales manager for the Indiana Sand & Gravel Company, Chicago, announces the completion of their new gravel plant on the C. & E. I. railroad at Kickapoo, Ind. This plant will have a capacity of not less than 30 cars per day, and in all respects is thoroughly modern and up-to-date. It is among the most complete plants of its kind in the country.

"Business has been very good with us," said C. B. Sheffer, president of the Garden City Sand Company. Since January we have had what we term a good trade for the winter months, and have no kick coming. The prices on sand and gravel are holding up remarkably well. The railroads are starting to buy, and when they do so it benefits everyone; when they quit buying it injures everyone. The deliveries are good right now and we look for a fine big year when the season really opens."

A representative of the Richardson Sand and Gravel Company reported things in pretty good shape, though rather quiet at this time of the year. This quiet month is usual. Prices remain about the same as a month ago. They are satisfactory. There is a great deal of good work coming out from the city and railroads for track elevation and such work calls for a lot of sand and gravel. The representative was very optimistic, and said he believed things would open up in good shape in the spring, when the weather improved.

J. S. Putney, of the Lake Shore Sand and Gravel Company, was in a cheery mood and thought business was in good shape. He said: "The outlook is very good, trade is beginning to pick up right along and orders are coming in in good shape. We shipped more sand and gravel the past two months than we did during the same period a year ago. The Chicago Railways Company is going to construct fifty miles of new track extension. In this work it is estimated that 100,000 yards of sand and 200,000 yards of crushed stone will be used. This track

extension is an assured fact and it only wants good weather to be started. Prices are remaining about the same. They are satisfactory to us now."

LOUISVILLE SAND AND GRAVEL NEWS.

Louisville, Ky., Feb. 15.—Sand men are having good business in spite of the off season still being in effect. The Nugent Sand Company has had its diggers going steadily, and while no large jobs are in progress enough small work is being done to consume a big lot of material. The company recently bought the towboat Sadie Baker and has put it in commission for general harbor work.

John M. Settle, of the Ohio River Sand Company, has returned from a trip to Florida and Cuba, which he took in company with Frank S. Cook, a well known local lumberman. He was absent about a month. Business with the company has been fair, considering the weather. One digger is at work, but its operations have been somewhat interfered with by the high water which has prevailed in the Ohio.

EASTERN SAND AND GRAVEL NEWS.

Pittsburg, Pa., Feb. 18.—The Zenith Sand Company has been formed, with a capital of \$100,000.00, at Hinton, W. Va., by George O. Queenberry, D. E. Lohoy, Charles O. Blodsoe, A. A. Riddleberger and R. F. Dunlap, of that place.

The Deckers Creek Stone & Sand Company has completed extensive improvements to its Sturgis plant near Morgantown, W. Va., and the plant is now turning out an extra large supply. Most of its product is marketed in Morgantown.

The Fox Silica Sand & Stone Company, whose plant is located at Doguscahonda, near Ridgway, Pa., has been shut down for the annual repairs. It has a large stock of sand on hand and will soon be running full again.

The Buckeye Sand Company says things are pretty quiet at present. The product is foundry sand exclusively and while many new foundries are being built their orders are not being placed yet.

The National Sand & Gravel Company report very little doing now owing to the weather and frequent high water. They will start one digger soon up the Allegheny river. They report that the city is just beginning to ask for estimates on sand and that other concerns have not put out their requisitions.

The Iron City Sand Company had a very good month in January and was well pleased with its 1910 trade. It is working two diggers now along the Ohio river, single turn. High water delayed its operations a little. According to its officials business looks fair and more city work is to be expected this year than last.

The Mackinaw Sand and Gravel Company, of Lincoln, Ill., is installing an up-to-date screening and washing plant at the pit at Mackinaw.

The capital stock of the J. E. Carroll Sand Company, Buffalo, N. Y., has increased its capital stock from \$1,000.00 to \$25,000.00, it is reported.

The Fox Silica Sand & Stone Company, at Doguscahonda, near Ridgway, Pa., shut down for repairs a week ago. They have a large stock on hand.

The Deckers Creek Stone & Sand Company has completed all its improvements at its Sturgis plant, near Morgantown, W. Va., and is turning out an extra large supply.

The Robert H. Atkinson Sand Company has been incorporated at Pueblo, Colo., with a capital stock of \$100,000.00. The incorporators were H. E. Brayton, H. D. Tudor and P. J. Dugan.

The Faxon-Chert Company has been incorporated at Memphis, Tenn., to deal in sand and gravel. The capital stock is \$10,000.00. The incorporators were W. B. Troy, Jr., F. W. Nichols, W. A. Shibley and W. L. Lamar.

The Zenith Sand Company has been incorporated at Hinton, W. Va., to deal in sand and manufacture cement. The capital stock is \$100,000.00. The incorporators were George O. Queenberry, James O. Blodsoe, A. A. Riddleberger, R. F. Dunbar and D. E. Lahey.

The Enterprise Sand Company, whose plants are located at Conneaut, Marietta and Zanesville, Ohio, and New Cumberland, W. Va., is marking time just now. Considerable foundry trade is in sight and it believes that the business in molding sand will be better this spring than for several years.



BRICK MANUFACTURERS.

Annual Convention of the Allied Bodies Held This Month at Louisville.

Louisville, Ky., Feb. 15.—The annual convention of the National Brick Manufacturers' Association and its allied bodies, the National Paving Brick Manufacturers' Association and the Building Brick Association of America, held their annual conventions in this city the week of February 6. The attendance was unusually large, and the interest shown in the gathering by members of the trade was keener than in several years, according to statements of the executive officers.

Officers of Brick Manufacturers.

The National Brick Manufacturers' Association elected the following officers:

Charles M. Crook, Youngstown, O., president; Charles A. Bloomfield, Metuchen, N. J., first vice-president; H. H. Rogers, Rochester, N. Y., second vice-president; E. B. Rogers, Alton, Ill., third vice-president; Theodore A. Randall, Indianapolis, secretary; and John W. Sibley, Birmingham, treasurer.

Officers of Paving Brick Association.

Officers chosen by the National Paving Brick Manufacturers' Association included the following:

C. J. Deckman, Cleveland, O., president; J. W. Robb, Clinton, Ind., vice-president; C. C. Barr, Streator, Ill., treasurer; and Will P. Blair, Indianapolis, secretary.

Officers of Building Brick Manufacturers.

The executives of the Building Brick Manufacturers of America are now these:

R. L. Queisser, Cleveland, O., president; Ralph Subkins, St. Louis, vice-president; Parker Fiske, New York, secretary and treasurer; members executive committee, F. W. Butterworth, Danville, Ill., and William Hanley, Bradford, Pa.

The Matter of Advertising.

The big feature of the meeting that was in evidence above all others was the question of advertising. The final decision was in favor of the formation of a Publicity Bureau by the Building Brick organization, which shall exploit the merits of the brick house as against that of wood or concrete. Assessments on the members of the association will be in accordance with the output of their various plants. It is expected that the fund which will be annually available under this arrangement will be in the neighborhood of \$50,000.00.

Frank tributes were made by members of the organizations to the aggressive campaigns of cement manufacturers, which have resulted in the tremendous demand for concrete as a building material. It was declared that the brick manufacturers have been asleep, and that they must get busy and begin active work in the direction of educating the public in order to win back part of their lost business.

The keynote in this connection was struck by E. E. Sunderland, of Omaha, Neb., who addressed the brick men on the subject, "The Missing Link Between Success and Failure."

"We have simply been asleep," he said. "We have not advertised. Our competitors have advertised and as a result they are getting the business. When you buy soap or flour or any other commodity, whose brand do you buy? The brand you always see advertised. It is the same way with the home-maker. When he proposes to build a home he simply goes by advertisements and he never sees a brick advertisement. The only advertisements he sees are of cement and stucco and woodwork. Consequently we lose his trade. He almost forgets there is such a thing as brick. It is now up to the brick manufacturers to advertise if they want to keep in the market."

Many of the addresses which were delivered were along the line of the advantages claimed for brick as against other material. W. E. Dunwoody, of Macon, Ga., spoke on "The Brick Venerated House, Its Cheapness and Desirability." J. P. B. Fiske, of New York, spoke on "The Comparative Cost of the Brick House and One of Cement or Wood." He said that the public is beginning to realize that there is much more depreciation in frame houses than in brick ones and that although

the brick house is the more costly it is worth the difference. John Andres, of Evansville, emphasized the need of presenting arguments to the public in an address on "Winning the Public for Brick."

The paving brick men also went into the question of extending the use of brick streets, and urged the cleanliness and durability of highways of that material as arguments in their favor. Jesse Taylor, of Jamestown, O., secretary of the Good Roads Federation of that state, declared that brick streets are the best in connection with motor traffic. He said that the brick roads of the Romans, which lasted for centuries, demonstrated the permanence of such construction.

The Paving Brick organization decided to remove the headquarters of the organization from Indianapolis to Cleveland, the change to become effective March 15. The reason assigned for the change is that Cleveland is a "show city" for paving brick, containing more No. 1 paving than any other city in the country. There are also 400 miles of brick roads in the country leading into Cleveland.

The entertainment of the brick manufacturers was attended to chiefly by the Louisville Brick Club, the officers of which are as follows: T. Bishop, president; M. J. Bannon and John G. Morey, vice-presidents; J. Crow Taylor, secretary, and Owen Tyler, treasurer.

It was recommended that the 1912 convention be held in Chicago, but the executive committee of the general body will determine the time and place later on.

LOUISVILLE CLAY NOTES.

Louisville, Ky., Feb. 15.—A. L. Harris, of Glasgow, Ky., is considering the establishment of a plant to manufacture pottery, tiling and other clay products.

The Ashland (Ky.) Fire Brick Co. has filed a complaint with the Interstate Commerce Commission, asking that rates on fire clay and fire brick between Ashland and points in southeastern territory be reduced, alleging that they are at present excessive and unreasonable. The average rate at present is 16 cents, and the company asks that it be reduced to 12 cents.

ILLINOIS CLAY NEWS.

Springfield, Ill., Feb. 21.—Frank G. Patteson, of Galesburg, has been chosen president of the Purlington Paving Brick Company to succeed W. S. Purlington, who recently severed his connection with the company. George C. Prussing and C. D. B. Howell, of Chicago, were chosen vice-presidents; W. E. Terwilliger, of Galesburg, secretary; C. H. Chamberlain, of Galesburg, treasurer, and W. G. D. Orr, general manager. Directors elected in addition to officers were W. E. Phillips, of Galesburg, and T. P. Walsh, of Davenport, Iowa.

The Urbana, Ill., city council has granted the Urbana and Champaign Electric Railway a franchise to build a switch to the plant of the Sheldon Brick Company.

Judge J. P. Lyman is a new member of the board of directors of the Grinnell Brick and Tile Company, of Grinnell, Iowa.

P. H. Tiernan, of Macomb, is building a new workshop and will add new sheds this winter, having orders enough now for brick to keep his plant going at capacity for some time.

The Wabash Vitrified Brick and Mining Company, of Grayville, Ill., has leased a twelve-acre tract for a site for its new factory.

Six new kilns, three switch tracks and new buildings for workers have busied a force of forty men at the plant of the D. H. Haeger Brick and Tile Works, near Coal City, Ill.

The Acme Brick Company, of Chicago, has been incorporated with a capital stock of \$10,000.00 to manufacture and deal in brick, stone, cement and clay products. The incorporators are J. W. Atkinson, H. Longfield and Joseph E. Hyman.

The Abbey Brick Company, of Chicago, has been incorporated with capital stock of \$50,000.00 to manufacture and deal in brick, tile, lime and other building materials. The incorporators are Charles W. Labinsky, Alfred B. Davis, Jr., and Glenn W. Jackson.

The Macomb Sewer Pipe Works, Macomb, Ill., has been forced to lease an additional story for office purposes because of growing business.

H. C. Morrow has been re-elected president and general manager of the White Hall Sewer Pipe and Stoneware Company, of White Hall, Ill. New directors are J. F. Claus and R. T. Cassell.

C. L. Jones, of Chicago, and other men of that city who are associated with him, are planning the construction of a brick plant at Nashville, Tenn.

WISCONSIN CLAY MANUFACTURERS.

Milwaukee, Wis., Feb. 20.—The eleventh annual convention of the Wisconsin Clay Manufacturers' Association, held at the St. Charles hotel, February 1, 2 and 3, was one of the most successful in the history of the organization. The attendance was larger than a year ago and the subjects up for discussion were especially timely and interesting. Discussions of mutual fire insurance, publicity, legislation and railway rates were only a few of the leading topics considered.

Officers for the ensuing year were elected as follows: President, W. J. Craney, Kenosha; vice-president, Samuel Guenther, Port Washington; secretary, Prof. Samuel Weidman, University of Wisconsin, Madison; treasurer, E. H. Korner, Fond du Lac.

"Some of the Difficulties in Operating Medium Sized Plants" were explained by J. G. Hamilton, of Grand Rapids, Wis. State Senator A. W. Sanborn, chairman of the joint committee on industrial insurance of the Wisconsin legislature, addressed the convention on the industrial insurance bill now before the legislature and urged the members present to support the measure. Prof. Ross C. Purdy, of Columbus, O., was prevented by illness from delivering his address on difficulties attendant upon the use of up-draft kilns, and his place was taken by Prof. Havard, who gave a short talk on "Fire Brick." Davis Brown, Tecumseh, Mich., and E. H. Korner, Fond du Lac, Wis., read papers relating to brick and brickmaking machinery. One of the most interesting addresses was presented by Secretary Weidman on "A Proposed Exhibit of Model Brick Dwellings and Other Brick Structures for State Fairs."

Resolutions were later adopted by the association petitioning the board of regents of the University of Wisconsin for the establishment of a laboratory for testing clays and clay products and for the inauguration of a course of instruction in ceramics for the purpose of assisting the clay-working industry in the further development of the state's resources. They did not confine their petition to the university alone, but also to the state department of public instruction, urging the establishment of courses of instruction in brick-laying in connection with other courses in industrial subjects, now being taught in the high schools of the state.

The association went on record as endorsing the recently organized Wisconsin Manufacturers' Association and elected a member to that association.

The executive committee recommended Milwaukee for the 1911 convention. It was also decided to make future exhibits more comprehensive, and with this end in view circulars will be sent to the building supply men, architects and contractors, inviting them to attend next year's convention.

CLAY AND TILE MEN TO MEET.

The third annual convention of the Northwestern Clay Association, comprising the clay and tile industries in Minnesota, North and South Dakota, and Western Wisconsin, will be held in Minneapolis March 15 and 16.

J. W. L. Corning, manager of the Chaska Brick & Tile Company, St. Paul, is president and Axel Anderson, manager of the M. Anderson Brick Company, Minneapolis, is secretary. The program is in charge of Ira C. Jones, of Minneapolis, Rufus P. Morton, of Princeton, and R. B. Hineckly, of Luverne. The banquet committee consists of E. H. Cobb, of Minneapolis, J. P. McLean, of Menomonie, and F. J. Nixon, of Duluth.

MAKE IMPROVEMENTS.

Fort Dodge, Iowa, Feb. 16.—A number of improvements have lately been made in the plant of the Cardiff Gypsum Plaster Company. These improvements consist of a new engine, 500 h. p.; larger crushing devices; changing its methods of handling the rock by crushing the same as it arrives from the mine and storing crushed rock in a large shed, which is provided with a tunnel and belt conveyors to carry the rock from the storage shed to the pulverizer. T. F. Breen, general manager, believes indications for business this year are exceptionally bright.

The Amalgamated Brick & Tile Company has been incorporated at Newark, N. J., with a capital stock of \$1,500,000.00. The incorporators are Edward N. Hill, Walter O. Croghan and Marie E. Nauk. The company will manufacture and deal in tile.

The Hot Springs Gypsum Company has been incorporated at Hot Springs, with a capital stock of \$100,000.00.

**HOLD THREE DAYS CONVENTION.**

Ft. Dodge, Iowa, Feb. 13.—A three days' convention of the salesmen and sales managers of the United States Gypsum Company was held here last week at the Wakkona Hotel, February 9, 10, 11. The convention was headed by the general sales manager of the company, W. E. Shearer. More than seventy-five in number were present, representing the sales force of the western and central divisions of the United States Gypsum. On Thursday, the first day of the convention, a special coach of the Fort Dodge, Des Moines & Southern Railroad was chartered and boarded at the depot by the "boys," dressed in white duck suits and caps for the occasion of inspecting the mines and mills, including the plaster mill and the block and plaster board mill.

The next two days were spent in discussions purely on educational lines, the object being to better acquaint the sales force of the company with the material and methods of manufacturing; also how best to introduce the new products of the "U. S. Gypsum" to the trade.

Thursday night a smoker at the hotel was much enjoyed and Friday night the entire force was taken to the mill to watch it running by electric light. All the mills and mines of the company are lighted throughout by electricity. It was on this night trip that some of the most undaunted and faithful of the sales force sat for their "pictures" at the end of the mine, 72 feet below level surface.

On Saturday night, February 11, the convention wound up with a banquet at the Wakkona Hotel. At this banquet there were some very interesting discussions by the managers and the older salesmen concerning the value of the company's products, all of which were educational in character to the entire force.

Several of the stockholders were present at the banquet, who expressed their approval of the plan of the convention and the results that were unquestionably obtained.

One of the striking features of this convention was that the banquet carried with it continued discussion of the United States Gypsum Company's material, rather than the usual postprandial talk that prevails at such functions.

Prominent among the heads of departments at the convention were:

W. E. Shearer, general sales manager of the company.

F. W. Farrington, manager western sales.

W. L. Krider, manager central sales.

R. B. Holcomb, manager southwestern sales.

O. M. Knode, general manager operations.
C. R. Birdsey, who designed and erected the new mill.

LOUISVILLE PLASTER NEWS.

Louisville, Ky., Feb. 15.—The Kentucky Wall Plaster Company is doing a good business in spite of February holding the boards, and is looking forward to an excellent trade a little later on. The local plant is running steadily and that operated by the company in Jeffersonville is in action a good part of the time.

The Southern Wall Plaster Company is doing an excellent business, and is running over-time. Prospects for spring are reported as being the best for a long while.

WEST COAST PLASTER NEWS.

San Francisco, Cal., Feb. 15.—The Standard Plaster Company has been incorporated at Los Angeles, with a capital stock of \$1,000,000.00, by F. A. Garbutt, W. W. Orcutt, T. Newman, S. C. Hall and C. E. Johnson.

According to a report from Reno, Nev., the large gypsum deposit near Gerlach, Nev., was sold a couple of weeks ago to an eastern syndicate, and will be developed by the construction of a road from Gerlach to the property. It is understood that a plant to prepare the material for the market will be erected in San Francisco.

The plastering contract on the Lincoln High School in Portland, Ore., has been awarded to J. O'Hare, of that city, at \$19,300.00.

The Consolidated Pacific Cement Plaster Company, of which J. D. Bowersock is president and J. J. Abramson sales manager, has a plant at Amboy, on the Santa Fe railroad, near Barstow, Cal. Equipment has been installed at a cost of \$250,000.00, with a capacity of about 3,000 tons per month. The company has a gypsum deposit two miles from the plant, connected with it by a private railroad. The deposit covers about 1,000 acres, and is developed by open quarry work, the cars being loaded by means of teams and scrapers.

The Eshia Plastering Company has been incorporated in San Francisco, with a capital stock of \$5,000.00, by W. H. Bowie, F. J. Foran and J. K. Eshia.

PENNSYLVANIA PLASTER NEWS.

Pittsburgh, Pa., Feb. 18.—The Crown Wall Plaster Company, of Braddock, Pa., is opening a Pittsburgh distributing office with Herbert R. Mosher general sales agent and traffic manager. Mr. Mosher was for several years traffic manager of the Furnace Run Sawmill & Lumber Company, and previous to that time was with the B. & O. railroad. He has an extensive acquaintance and is called "the right man for the place." The Crown Company has a capital of \$100,000.00 and has been in the business about thirty years. It employs thirty men at its Braddock, Pa., plant, and about thirty-five at Port Clinton, Ohio. Its daily capacity is 150 tons. Its products are Crown wall plaster, ready mixed and unmixed, crown fibre plaster, ready mixed and unmixed, Crown plaster paris, Crown magnesia finishing lime. The officers of the company are: President, W. M. Holmes; secretary and treasurer, Leslie B. Holmes; sales manager, Herbert R. Mosher.

The National Mortar & Supply Company has been paying comparatively little attention to its plaster business of late. It is well equipped at Gibsonburg, Ohio, and its plaster has a splendid reputation. Its trade in agricultural lime, however, has been going ahead so rapidly as to make the plaster end of its business practically subsidiary.

ST. LOUIS PLASTER NEWS.

St. Louis, Feb. 16.—The Acme Cement Plaster Company say that the heavy demand for hard wall plaster this winter was something of a surprise in that it was not expected, and is, of course, owing to the very favorable conditions which have prevailed most of the time this winter over a very large territory, which has admitted of building operations being carried on. The outlook for 1911 is exceptionally fine, taking the country at large into consideration. Sales Manager Steep is still a great traveler and was on the point of starting off for Chicago for a few days' stay.

REBUILDING BURNED MILL.

The United States Gypsum Co. has begun the work of rebuilding its mill in Alabaster, burned some time ago. It is expected it will be ready for operation in early spring.

CEMENT PLASTER FACTORY PLANNED.

The Fillmore Cement Plaster Company, Fillmore, Cal., has let the contract for the construction of a two-story corrugated iron factory building, to be erected on the Southern Pacific tracks. It will be 50 x 102 feet, 40 feet high. Other buildings are contemplated.

PLASTER COMPANY ELECTS OFFICERS.

The Higginson Manufacturing Company, plaster manufacturers, Newburgh, N. Y., had their annual meeting of stockholders last week and the following officers were re-elected: President, Thomas H. Millsbaugh; secretary and treasurer, Edmund Sanxay; superintendent, S. V. Many.

An American consular office in a Canadian city requests the names of manufacturers in the United States of blue board, commercially known as plasterer's board, a sample of which accompanied the request and is on file in the Bureau of Manufactures. A local company is asking for the reference, and, as it is preparing to place a large order, American firms should give the matter immediate attention. Inquiries should be addressed to the Bureau of Manufactures, Department of Commerce and Labor, Washington, D. C. File number 5897 should be mentioned.

The Charlotte Plaster Company, of Charlotte, N. C., will rebuild their plant reported burned. They will install new machinery and operate exclusively by electricity.

BULLETIN ON LIME KILNS.

The Improved Equipment Company, Combustion Engineers, New York City, announces its new line of lime kilns and lime producing equipment in its Bulletin No. 4, which has been recently issued, and contains besides a description of the company's apparatus, a discussion of the principals and economies of lime manufacture. The company not only builds its own apparatus but is also prepared to design and install complete lime plants.

The Eau Claire Concrete Company, of Eau Claire, Wis., has purchased a new location and will extend its work in the manufacturing of cement blocks for building purposes.



U. S. GYPSUM CO.'S SALESMEN AT FORT DODGE, IOWA.

CEMENT

On January 28 the King of England sent in his congratulations to Isaac C. Johnson, the inventor of Portland cement. Mr. Johnson was 100 years old on that day. He has not touched liquor since his eighteenth birthday, is the master of many languages, and is engaged now in translating the gospel of St. John from the Greek.

He was recently asked the question, "Is life worth living?" and replied, "Yes, if you employ your time in making others happy."

INCLINED TO BE OPTIMISTIC.

We are in receipt of a communication from W. F. Cowham, president of the Northwestern States Portland Cement Co., and also of the Cowham System. Mr. Cowham says: "We are always inclined to be optimistic, as the clouds usually roll by and business gets better. This is a wonderful country and is bound to go ahead, and these little setbacks only tend to make business prosper after they pass by. While from our standpoint it does not look very bright at the present time, our experience is that it is always darkest before day, so we expect a good year in building operations and general demand for our product."

THE MARQUETTE CEMENT MANUFACTURING CO.

The above illustration shows the works of the Marquette Cement Manufacturing Co., at La Salle, Ill., manufacturers of the well-known Marquette Portland cement.

This factory was established in 1897, with a daily capacity of 150 barrels, and has increased until now the daily production is 6,000 barrels.

The Marquette company have recently made additions and changes in their plant, increasing their output from 4,000 barrels per day to 6,000 barrels per day. Their product is sold and used throughout the Central West, and has entered into the construction of a great many worthy projects in that territory. It was used exclusively in the La Salle Hotel, Chicago; the Grand Avenue viaduct, in Milwaukee; the dam of the Marathon Paper Mills Co., at Wausau, Wis. and hundreds of thousands of barrels have been used by the railroads in Chicago in their track elevation work. This company have their general sales offices in the Marquette Building, Chicago.

UNIVERSAL INSTALLING MOTORS.

The Westinghouse Electric & Manufacturing Company has recently closed a contract with the Universal Portland Cement Company for motors to operate their No. 6 plant at Buffington, Ind. The motors will be of the "MS" Mill type, having characteristics specially suitable for cement mill work, and they will operate on a 3 phase, 25 cycle, 440 volt circuit. The sizes range from 5 h. p. to 200 h. p., and the aggregate capacity is 11,500 h. p. This plant will be the largest in the United States, having a daily capacity of approximately 12,000 barrels, and will be electrically operated throughout, the various drives being of the latest development for cement mill work.

CEMENT INDUSTRY GROWS.

City of Mexico, Feb. 17.—It is announced that the cement plant at Toluca, State of Hidalgo, which is owned by the Compania de Cemento Portland, South America, is to be doubled in capacity. W. E. Burk, general manager of the company, recently placed orders in the United States for machinery for increasing the capacity of the plant to 200 tons of cement daily. This company has made a remarkable record of success. The plant's construction was begun in September, 1909, and was finished only a few months ago.

Concrete construction is gaining in popularity very rapidly in Mexico. The country is rich in cement material and the manufacturers are taking advantage of the opportunities that are offered them to supply the growing home demand.

TO REBUILD CEMENT PLANT.

The Phoenix Cement Company, of Nazarette, Pa., is arranging to make extensive improvements at the mill. Draftsman Bray, of New York, is at the mill now, working on plans with the object of rebuilding the mill, and increasing its capacity. Several of the buildings will be enlarged.

The engine building will be enlarged and a large new engine will be purchased, probably with a capacity of 800-horsepower.

The roaster building will be enlarged and a new 125-foot roaster will be installed and the present 60-foot roasters will be enlarged.

The grinding department will be increased and four new Emerick mills will be installed.

A large stone crusher is to be purchased and the probability is the capacity of the mill will be increased nearly 600 barrels per day.

The Atlas Portland Cement plant, at Northampton, Pa., recently shipped 52 cars loaded with cement to tidewater. The cement will be shipped to Mexico. Four engines were required to haul the train.

CEMENT PLANT NEARING COMPLETION.

Twenty-five electricians are at work installing the motors and other electrical appliances for the Inland Portland Cement Company at Metaline Falls, Wash. They came from Allentown, Pa. The huge buildings of the company are now under cover.

Two hundred men are opening the company's quarries of lime and slate rock, and it is expected that shipments of cement will be made not later than April 1. The company in charge of the installation of the two aerial tramways for the cement company completed the work last week. These two tramways will have a combined capacity of 600 tons every 10 hours.

The Direct Material Supply and Quarry Company has been incorporated at New York City, with a capital stock of \$100,000.00 to deal in and quarry stone, and general building supplies. The incorporators were J. J. Cushing, Crawford, N. J., A. D. Moore, and C. A. Nicholas.

INCREASING CAPACITY.

The Crescent Cement Company at Wampum, Pa., has started work on extensive additions to its plant which will cost \$100,000.00. The plant will have a capacity of 4,000 barrels of cement daily. It is absolutely fireproof, being constructed practically of concrete, and a feature of it is the huge smokestack of concrete about 300 feet high. The company has sufficient raw material nearby to supply the plant for 75 years.

ILLUSTRATED BOOKLET ISSUED.

To introduce, as it were, their new mills to the trade, the Crescent Portland Cement Company, of Wampum, Pa., has recently issued an attractive illustrated booklet describing the mills and their product and giving appropriate quotations to bring out the various points the book tells of.

ENLARGING CEMENT PLANT.

The plant of the Riverside Portland Cement Company at Los Angeles, Cal., is being enlarged and new machinery installed. The improvements will increase the capacity of the plant from 3,000 to 6,000 barrels of cement per day. Six months will probably elapse before the work is completed.

The Marquette Cement Manufacturing Company, of La Salle, recently secured a 6,000 barrel contract for the concrete work in the new McKinley system hydro-electric plant at Marseilles, Ill.

CHICAGO CEMENT NEWS.

Chicago, Feb. 21.—Conditions this past month were much improved with the cement dealers. At the start the trade did not seem to be making any headway in February. Prices were in a continual state of agitation and no one knew when they would again become steady. This situation, however, is now improved and the cement firms are getting a good price for their product. All the dealers who had exhibits at the cement show expect a quick boom in trade. There were so many out-of-town persons attending this show that cement trade in the country is expected to be stirred up to such a degree that buying will begin much earlier this year than last. Steadily through the past week the market on cement has been climbing and the demand has been improving. If the same amount of space is desired in sky-scrapers hereafter the height over 200 feet must be depth and extend into the basement. This work will all be much concrete construction and together with the increased building propositions will make 1911 a "hummer" for the cement men.

C. C. Quincy, the new western manager of the Atlas Portland Cement Company, reported: "The conditions are good this month. We find the demand for Portland cement very steady. Our actual deliveries for the month show up in good shape. Prices have been showing a steady upward tendency since last week. Our exhibit at the cement show, other than the first two booths, which comprised a very attractive garden setting made of 'Atlas White,' showed a miniature cement barn, which attracted a great deal of attention. The figure of Atlas holding up the world was made from 'Atlas White' and was well received. Have recently moved to our new offices in the Corn Exchange building, where our western business will be conducted and where we will be glad to receive our friends and acquaintances."

"Things are looking good," said Gold Williams, sales agent for the Marquette Cement Manufacturing Company. "Prices are going up and the demand is satisfactory and steady. In general the trade conditions have much improved during the past several weeks. We have but recently completed the grand viaduct at Milwaukee, Wis. This bridge is the largest of its kind in the world, and 55,000 barrels of our cement was used in the construction. We recently removed to our new offices on the fifth floor of the Marquette building."

A representative of the German-American Portland Cement Company reported: "There has been no change in the trade since last month. Prices remain the same, with an increasing demand. Things will be much better in a short time. We had on exhibition at the cement show a reinforced concrete steel bridge, which was made at our plant at La Salle, Ill. The bridge was about 14 feet long and 4 feet wide and was a perfect miniature bridge, every detail of the regular bridge construction being carried out to the fine points. This, together with handsome decorations, was the main part of our exhibit."

D. Richter, the Chicago representative for the Alpha Portland Cement Company, had a very optimistic view of the trade conditions at present and for future business. He reported: "This month with us has been very good, as good as any month in the year. Prices had a little downward flutter last week, but they now show an upward tendency. We get \$1.22 a barrel for our cement, f. o. b. Chicago, and do not book orders ahead at these prices. I have just returned from Springfield and Decatur and found things in good shape down there. Everything seems to point to the fact that another good year is coming. We are shipping most cement this month to Ohio, where the cement block industry has taken a good hold, more so than farther west, and operations started in Ohio about February 1. The prevailing price a month from now will be much higher and we expect to have many good orders to fill."



MARQUETTE PORTLAND CEMENT COMPANY'S PLANT.

WOLVERINE'S FLYING WEDGE.

The Wolverine Portland cement is one of the pioneer brands of the West, and one that is well known and highly esteemed wherever it has been used. The big engineers, as well as the dealers and small contractors, have used Wolverine cement, and always with satisfaction.

At last, we have been able to get a complete outfit of pictures of the three personalities who make the Flying Wedge a success in the sales department of the Wolverine Company, W. E. Cobean, the sales manager, with his two right and left bowers, who cover the territory in which Wolverine cement is marketed.

D. E. Curtis is known to the Indiana and Ohio customers of the Wolverine brand, and he is popular with all of those who have entrusted their cement business to him, because he makes it his business to see to it that every promise and every engagement is fulfilled to the letter, and satisfaction is secured thereby without any guarantee, which is always better and more satisfactory. Mr. Curtis is an Ohio boy, raised in Lima, and has been connected with the sale of cement with the Wolverine Company for more than two years.

C. F. Lundgren, who covers the Wolverine state with Wolverine cement, while still a young man, has been in the builders' supply business since he was a small boy in the city of Chicago, where he was born. Mr. Lundgren has been selling Wolverine cement to the dealers and cement users of Michigan for the past two years, and his long experience in the dealers' game has taught him the line of argument that makes good with the customers when he assists his dealer friends.

W. E. Cobean, the sales manager, is too well known to the readers of ROCK PRODUCTS to need any further introduction. He has implicit confidence in his two lieutenants, and the three of them constitute



C. F. LUNDGREN, MICHIGAN SALESMAN WOLVERINE PORTLAND CEMENT CO., COLDWATER, MICH.

B. F. Affleck, sales manager for the Universal Portland Cement Company, said: "The demand for Portland cement is good and there is a very promising outlook for the future. Prices have been low the past few months, but they show a general upward tendency at this time. We were represented with five very attractive booths at the show, all tastefully decorated and constructed from cement. A miniature cement mill with all trains and equipment was one of the features of our exhibit."

A representative for Meacham & Wright reported: "Conditions are good and seem to be getting better all the time. Prices are about the same as they were last month. The demand is rather quiet, but it is not unsatisfactory for this time of the year."

J. U. C. McDaniel, of the Chicago Portland Cement Company, had on a happy smile. He reported: "There is a very good business in cement now. The demand is increasing rapidly and prices are going up right along, fast and all the time. Actual deliveries this month by our company have been unusually heavy, so heavy, in fact, that they will be hard to handle if the increase keeps on with us."

George W. De Smet, Portland cement and waterproofing, said: "Vulcanite, our special product, has a very good demand and a very good price. We find that deliveries being shipped this month are numerous, and unusual for the winter months. Orders that we have booked for future deliveries are good. Prices are satisfactory. We find that our exhibit at the cement show drew a large and interested crowd, and we were more than pleased with the results."

ST. LOUIS CEMENT NEWS.

St. Louis, Feb. 16.—"The year is opening up in fine shape," said Sales Manager A. H. Craney, Jr., of the Union Sand & Material Company. "The demand for cement here and at Kansas City is very strong and, for that matter, I learn it is good at the East also, being in case of some manufacturers from 30 to 40 per cent greater for the month of January than for the same month last year. The inquiry is both for prompt and for shipment prior to April 1, which is as far ahead as we will book orders. Based on the manufacture of 75,000,000 barrels last year, which was a record-breaking output for the United States, the outlook for the Portland cement industry is very bright, since this enormous consumption demonstrates that its use is on the increase. Our books show that we have an increase of over 20 per cent thus far in 1911 over the same period in 1910. Doubtless the publicity given cement by the big shows in Chicago and New York City by bringing the attention of the general public to cement and its uses, is doing a great work in promoting its sale."

The Continental Portland Cement Company report the demand with them for Portland cement much better than at the corresponding time last year.



W. E. COBEAN, CHIEF OF THE SALES DEPARTMENT, WOLVERINE PORTLAND CEMENT CO.

a penetrating wedge which has so successfully maintained the Wolverine brand as one of the leading Michigan cements.

DETROIT CEMENT NEWS.

Detroit, Mich., Feb. 18.—There has been an improvement in cement conditions in Michigan during the past month. The market is considerably firmer, and plants in the vicinity of Detroit are selling at \$1.25 to \$1.35 per bbl., in car-lots, f. o. b. Detroit. And they are not especially anxious to close at that price. Many dealers believe the market will show still better before spring. Plants are now running full and overtime, and in many cases are considerably behind in their orders. There has been considerable inquiry for stocks for early spring delivery, and this is taken as an indication that different Michigan cities will have a heavy building season this coming spring, summer and fall. There is also considerable stock going into the north and west. Duluth, Milwaukee, Minneapolis and other cities in that territory are buying Michigan-made cement, and their orders are larger, in many cases, than can be immediately filled.

"We are running full time, and are finding a very ready market for our product," said the Wyandotte Portland Cement Co. "Cement is selling from



D. E. CURTIS, INDIANA AND OHIO SALESMAN OF THE WOLVERINE PORTLAND CEMENT CO., COLDWATER, MICH.

\$1.25 to \$1.35 f. o. b., per bbl., in car-lots from Detroit, and there is a strong possibility that the market will advance still further. There is an especially good demand from the west and northwest and we are shipping much of our output to this district. Plants throughout the state are, we believe, running full, and the probabilities are they will continue so through the remainder of the winter and well into the summer, if they close temporarily even then."

The Elk Cement & Lime Co., of Elk Rapids, will be reorganized. The plant has been employing more than 100 men, manufacturing 1,200 barrels of cement per day.

Much interest is being shown in an experiment being made by the Hecla Cement Co., of Bay City, in the use of marl from Edward's lake, Ogemaw county, in the manufacture of cement at the Bay City plant. The big plant recently put into operation at the lake for the purpose of extracting the large amount of moisture from the saturated marl before it was shipped, but the operations were so extensive that it had to be abandoned and limestone from Alpena quarries was substituted. At the time the plant was started the water in the lake was lowered several feet and immense quantities of the marl exposed above the water line. It is now dried out so that teams can be driven over it with safety, and is being taken out loaded on cars at a minimum expense. It is thought by the company's chemists that it can be used in this form to good advantage and prove much cheaper than the limestone.

The Business Men's Association of Sault Ste. Marie has called off the deal it had on with the Great Lakes Portland Cement Co., of Chicago, relative to the removal of the plant to the city. The city officials who were sent to investigate the condition of the company reported unfavorably upon it.

Word has been received from Bedford, Ind., of the purchase of the plant of the United States Cement Company there by E. C. Voris, of Crawfordsville. The price paid was \$181,000.00. Mr. Voris represented the stockholders of the company, which manufactured hydraulic cement.

It is reported that a new cement plant at Kingsport, Tenn., owned by Mark Patter, of New York, and others, will be put in operation within the next few weeks. It has a daily capacity of 1,200 barrels. It is operated under the name of the Clinchfield Portland Cement Company.

The Empire Portland Cement Company, which many Wisconsin cities were endeavoring to secure, has decided to locate at Menominee, Mich., where a \$500,000.00 plant will be erected. Menominee offered a bonus of a \$12,000.00 site.

Charles Page, Tulsa, Okla., and associates are planning the organization of a \$250,000.00 company to build a Portland cement plant.

CEMENT SHOW IN CHICAGO

Fourth Annual Exposition of Cement, Concrete and Allied Interests Attracts Widespread Attention at the Coliseum. Many Exhibits Shown.

As this issue of ROCK PRODUCTS goes to press, the fourth annual cement show held in Chicago is closing. That it has been the most successful in point of attendance, artistic arrangement, and what is better still, from a standpoint of educational value, seems to go without saying. The show is pitched on a higher scale than any of those preceding. More attention was paid to the picturesque or artistic setting, with the result that the show presented a harmonious whole, and was no irregular, jagged and jarring picture, as was the case in former years. Improvements that have been made in concrete working machinery in recent years are far greater than most people imagine in a casual visit at the show. In every line the improvements have been very marked.

There did not seem to be as much block machinery shown as usual, but the machines that were on exhibit were far superior in efficiency and workmanship to those that have been exhibited in the past. Some of the old timers, who have been making the shows for the past six or eight years, are showing practically the same machines now as they did when they first began. These are the men who have been successful from the outset and, while they have made minor improvements and changes in their machinery, the principles are the same and the machinery, to all intents and purposes, is identical with the earlier models. The new companies that have put machinery on the market within the last few years, have profited by the mistakes made by their predecessors, and today we find practically all of the worthless machines have been eliminated, exemplifying the old adage, "A survival of the fittest."

Much improvement has been made in the way of molds and forms, and quite a number of these were shown.

Waterproofing paints and compounds were shown by several large concerns in this country. This branch of the industry has assumed huge proportions. Some of the largest paint and varnish manufacturers in this country have entered the business and with immense capital at their command, have placed on the market a line of materials which is far superior to the old waterproofing compounds, which were on the market a few years ago. As is always the case, there are always a few old timers who have made good on the market, but these have won out on sheer merit and deserve to succeed.

The waterproofing paints and compounds manufacturers have about decided that the only way of reaching the trade is through the builders' supply retailers, and nearly every large retailer of builders' supplies today carries one or more of these articles as a side line. They have been found very profitable. By exhibiting at the show, the interest is stimulated, and when the cement user buys his next lot of cement he puts in his order for waterproofing compound and paints at the same time. It is obviously too expensive to send traveling men all over the country or to send the materials by express from the home of the plant. They must be carried in stock in various localities, and the builders' supply retailer is the only man who can afford to do this with any degree of satisfaction or profit.

The Portland cement companies who had booths tried to outdo one another in point of elaborate and expensive displays. This good natured rivalry resulted in some of the most ornate and expensively decorated booths that we have had at any of the shows. White cements permit of artistic treatment, and the introduction of colored aggregates into the mass has resulted in some distinctly beautiful creations.

The guessing contest carried on throughout the show attracted the usual public interest, in fact, the enthusiasm was very high on several occasions. The winner was not announced as we went to press.

It is obviously impossible in the short space of time for us to write a story of the show or give an adequate description of the many interesting and instructive exhibits which were in the hall.

Architects and engineers are taking more interest in this cement show than they have ever done in

the past. The big ones are all in the concrete camp now, having recognized the well-established values of the great incombustible material. The fact is well fixed now that there is no other route to the elimination of the awful fire hazard and waste which amounts to immorality, besides the risk to human life, which is criminal in this enlightened age. When all the people realize these things "America's greatest shame" will be wiped out.

The Sioux City Cement Machinery Company, of Sioux City, Ia., are in Booths 2 and 3, and there is a big crowd around their McCracken Junior Cement Tile Machine, which is kept in operation all the time. W. J. McCracken, president of the company, is right there, and is ably assisted by F. J. McCracken and Charles Young. They are giving practical demonstrations of the manufacture of concrete drain tile in sizes of 4 to 16 inches in diameter and from 12 to 18 inches in length. These sizes can all be made by simply inserting the size of mold desired. This same machine also makes hollow building block 8x8x16 with a cylindrical core. This company manufactures another machine of larger size known as the double end machine. This produces tile at both the top and bottom of the frame. Two different sizes can be turned out at the same time or a building block can be made at one end while a drain tile is being made at the other end, or one end can be used without the other. The plates on the packing head are adjustable and removable, so that its wearing qualities are great. Mr. McCracken said he had sold three machines up to Friday night.

The German-American Portland Cement Works are at Booths 119 and 120, where John J. Duggan holds forth in charge of the exhibit. This is one of the very classy corners of the show. In the background is a concrete single span and bridge, a model of the Big Muddy bridge at Carbondale, Ill., on the Illinois Central railroad, on which original 15,000 barrels of this company's cement was used. The model on exhibition is very artfully decorated with green moss, pebbles, etc., and there is even a miniature river

underneath the arch where live fish add to the realistic effect. E. L. Cox, general sales agent, and Fritz Worm, of LaSalle, president of the company, were visitors at the booth Saturday.

Seventy million barrels of cement were manufactured in America last year. Few people perhaps appreciate what the sacking of this tremendous output means. Four sacks comprise a "barrel" of cement, therefore it required no less than two hundred and eighty million sacks to ship last year's output. The methods employed in sacking and shipping cement from the mills is thoroughly explained in an illustrated booklet entitled, "From the Raw to the Finished Product," which will be distributed free at booths No. 81 and 82 during the remaining days of the Cement Show. This booklet contains over 100 illustrations and thoroughly describes the manufacturing of cement, from the stripping of the soil down to the final grinding of the "clinker," and should provide interesting reading for architects, contractors, engineers and other users of cement.

The exhibit of the United States Gypsum Company is daily attracting more attention. There are many people interested in gypsum products who have no idea of what gypsum rock just from the mine looks like. The exhibit shows a quantity of gypsum rock as it came from the quarry and then shows the rock in all its different sizes and stages until it is made into plaster.

The famous Sackett Plaster Board and pyrobar gypsum tile are on exhibit and are attracting a great deal of attention. Visit the booth and have "Will" Price explain the workings.

While comparisons are odious as a rule, it is interesting to hear the various exhibitors make comparisons between the New York and Chicago shows. Some are saying that the Chicago show is not up to the standard of the New York show. These men are dyed-in-the-wool easterners. The westerner thinks there is no show like that at Chicago and that this



ROCK PRODUCTS ESCORTS MISS CHICAGO TO THE FOURTH ANNUAL CEMENT SHOW.



SECRETARY J. U. C. MCDANIEL ON THE JOB.

show is the greatest ever. We are frank to admit that from the reports of the numerous sales made at the Chicago show thus far that this end of the show will show up much better than at New York. President Hagar realized this, and at the close of the New York show he made the statement that he thought it was unadvisable to hold a show previous to the holiday season, and that next year they would try to hold the New York show after the first of January.

Under the present existing arrangements, the Chicago show has all the better of the dates because of the fact that the purchaser of machinery and supplies is more than likely to wait until he has seen everything before he makes any purchases. Of course, from the spectacular standpoint, Madison Square Garden offers a more picturesque environment and the further fact that Sousa's band was on hand lent additional glamor. However, the Coliseum does not lose by comparison, because there is no more stately pile than the magnificent building on Wabash avenue, and the majestic sweep of the hall and the beautiful decorations make a picture that is not only pleasing to the eye but soul satisfying.

While it is a little early to compute the results of the show, yet it is safe to say that from the standpoint of actual sales made and consummated at the show, the Chicago exhibition will far outrank that of New York. This, as far as the machinery manufacturers are concerned, is the final test of the worth or value of the exhibition.

As long as the two shows keep up there will always be intense rivalry, and the individual exhibits will be very much alike at the two exhibitions. Both have different spheres and both do much good in their localities.

The time is not far distant when there will, in all probability, be a consolidation of the western shows, so that there will be but three shows a year, each of more magnitude, and this will be all-sufficient. It is folly for the exhibitor to spend all of his money in traveling around the country making exhibitions. These exhibitions always have to be charged to the advertising account and some of the companies have a great big deficit to overcome, as the show game is rather an expensive one. It would be a good idea to have a show in New York, Chicago and Kansas City, and let it go at that.

The Ohio Ceramic Engineering Company, of Cleveland, are located in the Coliseum Annex in Booths 220, 221 and 222, where their various machines and appliances are being shown by J. C. Campbell, of the Chicago office, assisted by A. W. French, of Cleveland, E. A. Allen, of Chicago, and D. L. Wadsworth, of the home office. One of the most important features of their exhibit is the new Lakewood Mixer, which has recently been perfected and placed upon the market by this company. It is much heavier than the ordinary mixer and is very strongly built. It is gear driven and side loading with a wheelbarrow discharge. They also have on exhibition a large line of sundry equipment for handling concrete, sand, gravel, etc. These include buckets, mixers, cars, hoisting towers, concrete carts, and the Eclipse and Ideal patent bottom dump buckets, which are of especial interest.

The Cement Tile Machinery Company, of Waterloo, is exhibiting at Booths 92-93 a No. 1 Model B Schenck cement drain tile machine, equipped to make cement drain tile in sizes ranging from 4 inches to 12 inches, inclusive; its Perfection concrete mixer No. 2 on skids, intended for factory use; its new 4-Way block machine and Easy tile molds; one model of its Ideal brick, block and tile cars. The booth is in charge of J. H. Stewart, assisted by W. H. Stewart, W. P. Wells, W. L. Northrup, S. L. Norton, E. V. Haight, T. G. Spellman, Godfrey Gross, Lou T. Stratton and F. A. Roosa.

The Kent Machine Co., of Kent, Ohio, have three booths, 135, 136 and 137, where they are showing an elaborate display of their various machines. Amongst those who are present in the interests of the company are F. H. Merrill, secretary; F. A.



HAROLD SIMPSON, THE PRESTIDIGITATOR OF THE CEMENT MOLD BUSINESS.

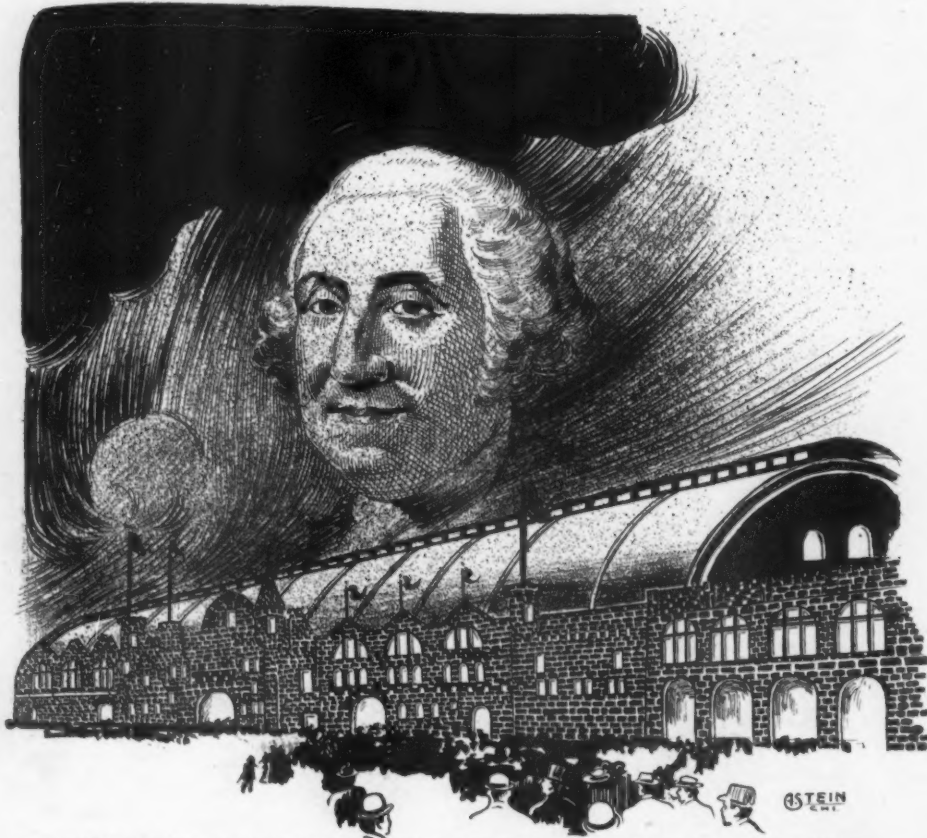
Kershaw, general manager; George M. Hackett; J. F. Davis, of Kansas City; A. L. Post, of Kent, and Mr. Dodge, of New York. Mr. Kershaw was busy all day Saturday in getting into operation their new tile machine, and it will be running today. This works automatically from the time the materials are thrown into the hoppers until the molds are removed. This is said to be an entirely new departure. It turns out tile of from 4 to 16 inches in diameter. Their regular line of mixers are attracting a great deal of attention and particular interest is taken in their measuring device for determining the exact amounts of the different materials. This is a very simple contrivance and is wonderfully accurate. They have one customer using this device who calculates the number of yards of concrete made in a day by the very simple basis of the number of bags of cement used.

J. S. Slosson, the ever smiling manager of the Curry bag tier booth, is one of the most pleased fellows at the show. The first two days' results of the show, particularly among the cement manufacturers, have been much greater than were looked for. The Clifford L. Miller Company makes 500 of these tiers a minute and during the coming year will make 100,000,000. Slosson said he had already covered all expenses and had a book full of orders. "Here's luck."

The exhibit of the Chicago Structural Tile Company, at booth 190, is the most interesting one in the entire Coliseum to those people who contemplate the use of concrete in their construction investments. Whether the visitor at the Show intends to build a cottage in the suburbs, a house in town, a factory building, or any other kind of structure where the incombustible feature is desirable, this particular exhibit, where the goods themselves are ready for delivery on the job where the building is to be erected, gets to the very heart of action, which is the motif of this great city of Chicago and its people.

In the exhibit are a large number of photographs, taken from buildings that have been constructed of concrete structural tile in all parts of the United States, many of them in New York and vicinity, others in Ohio, Illinois and elsewhere. With this progressive material, Chicago is not by any means behind the times, and buildings using this material are now under construction throughout the entire Chicago district. Those people who come to the show for the purpose of finding out how and where the concrete industry appeals to their purse, to their comfort and their convenience will find at the exhibit of the Chicago Structural Tile Company the one thing that they came to the show to find.

The Heath and Milligan booth, showing cement coating and waterproofing, is one of those where you want to stop and sit down. They have samples of very pretty coloring for cement walls and these make an attractive exhibit. Fred J. Morse is in charge.



THE SPIRIT OF GEORGE WASHINGTON PERVADEING THE CEMENT SHOW ON HIS BIRTHDAY.

The Chicago Structural Tile Co. have had to provide an engineer at their booth, No. 190, to figure the blue prints that are offered by prospective customers. The booth is in charge of R. A. Winterburn and W. Stuart Tait. A. A. Pauly, of Youngstown, O., the inventor of the Pauly machinery and system of tile manufacture, is assisting these gentlemen in taking care of the throng of home builders who realize their opportunity in getting immediate benefits from their visit to the Show by using this principle of concrete in the construction of fire-proof and sanitary homes such as have never before been possible in this part of the country or until the cement industry grew to its full stature by providing a material cheap enough for the general use of the cottage builder as well as the man who cannot be satisfied with less than a palatial residence.

At this exhibit there are shown 100 or more pictures of buildings of every type that have been built of Pauly tile in all parts of the country, and it is pre-eminently the most practical exhibit at the Show, because they are ready to take the order immediately and deliver the goods tomorrow.

The Lehigh Portland Cement Company's booth is right next to Rock Products' as you come in the front door from Wabash avenue. In the center of the space is a fountain and it has been stocked with real live turtles, each having the Lehigh brand on the back of the shell. The whole is surrounded by convenient settees with stuffed cushions, and there the Lehigh crowd congregate and entertain their friends and the public generally. F. E. Paulson, the traffic manager of the Indianapolis office is in charge of the exhibit. L. J. Moss, of the Memphis branch office; Bert L. Swett, W. H. Eccles and E. E. Fillion, of the sales and engineering departments, respectively, are on hand to manufacture fun and add to the pleasure feature of the show. Of course, there is always some business attached to all of this kind of fun. The booth number is 25.

The handsomely decorated booth of the Marquette Cement Manufacturing Company, right in the center of the Coliseum, is one of the bright spots for the visitors. Sales Manager Gold Williams is on hand with the company's entire sales force. They make their visitors glad that they have come, and then practically assist them to see the show by piloting inquirers around the immense show so that they can get the benefit of



GEORGE W. DE SMET, OF CHICAGO, THE BEAU BRUMMEL OF THE CEMENT INDUSTRY.



WABASH PORTLAND CEMENT COMPANY'S BOOTH.

attending more promptly than they would otherwise if they had to wander around amongst the immense amount of new and attractive cement information.

The exhibit at booths 75 and 76 are the headquarters of the Cowham System of Cement Mills. The wall surrounding the booths is artistic and ornate, made of Peninsular Portland cement noted for its very white color and extreme fineness. J. W. Boardman, Jr., of the sales department handling the product of the Michigan mill, is on hand. He is receiving many interested visitors and customers from all parts of the country.

Wadsworth, Howland & Company, manufacturers of Bay State line of colored waterproof paints, have an artistically arranged booth in which the various effects produced by their coatings are shown. The display is in charge of Hector N. Gordon and Leslie L. Turner, whose earnest advocacy of Bay State cement coating is making many friends for their firm.

The American Steel & Wire Company has a very attractive exhibit in the shape of a background representation of steel frame construction looking down Broadway, in New York, where the biggest buildings in the world have been constructed in the last decade with the use of many thousands of tons of the famous triangle mesh wire reinforcing material which the American Steel & Wire Company prepared for the concrete trade in the early stages of its history. In the foreground of this exhibit is a flat concrete slab carried over three I-beams supported with triangle mesh reinforcement imbedded in the concrete. Manholes are provided in the floor slab so as to exhibit the triangle mesh wire reinforcing and its position in the slab. It shows the ease with which the strongest type of floor slab can be built in the most economical way by use of the triangle mesh wire reinforcement. Harry S. Doyle, the chief of the reinforced concrete department, is in charge of this exhibit, and he is nearly always surrounded by a host of inquiring patrons on account of his attractive personality as well as the commercial aspect of the wonderful reinforcing material which his exhibit represents.

Triangle mesh wire reinforcement is without doubt the widest adaptable reinforcement material that has ever been offered on the market. It is the only type of reinforcement that can be safely handled alone with proper engineering instructions by a practical concrete worker, without having an engineering superintendent on the job every minute, for the reason that with general instructions the reinforcing can be easily understood and carried out successfully. It is known among engineers as the foolproof reinforcing material because it is almost impossible to make a mistake in placing the triangle mesh wire, while, of course, its highest efficiency is only attained with proper engineering skill and supervision.

The exhibit of the American Steel & Wire Company is always an interesting one, and Harry Doyle sees to it that everyone who stops at his booth is entertained, as well as edified.

The Wolverine Portland Cement Company has a very neat booth decorated with two mammoth vases of concrete, carrying palms and vines, in their decorative style. W. E. Cobean, the sales manager, with his right and left bowers, D. E. Curtis and C. F. Lundgren, are doing the honors

in front of the great frame seal of the Wolverine state, which is the emblem of the well-known Wolverine brand of Portland cement. Their booth number is 68.

The Fisher Hydraulic Stone & Machinery Company's booth, No. 90, has the distinction of having the only lady salesman in the machinery department. Mrs. Fisher, the wife of the inventor of the machine, received several bouquets yesterday, literally and otherwise.

E. Velde, salesmanager of the Universal Crusher Company, of Cedar Rapids, showed up smiling at the Cement Show in the Coliseum, after a most successful and profitable time at the Mid-West Cement Exposition at Omaha. The Universal Crusher, he says, will make the same grand record here.

The Ottawa Silica Co., of Ottawa, Ill., have an exhibit of standard testing sand as well as white commercial sand, which is now being very extensively used in the various manufactures of cement products, such as blocks, bricks, exterior plasters, white interior mortars, etc. C. B. Herring, president of the company, is in charge, assisted by F. A. Cebulski, who has a smile for every visitor, and they have some very attractive printed matter for the cement users to carry away with them. This booth is No. 11.

W. E. Snyder and J. D. Stacy, of the LaGrange Specialty Co., of Indiana, and manufacturers of the famous "Little Giant" cement brick machine, were feeling "out of sight" over the prospects of the attendance of the Cement Show. They are exhibiting for the first time at their booth 267 the Little Giant Tamper, which measures the material and tamps and trowels the brick. This tamper can be used with any "Little Giant" brick machine.

H. F. Hobbs, of the Hobbs Concrete Machinery Company, of Detroit, Mich., is exhibiting at booth 128-129 three of its block machines in actual operation. Very wet concrete is used to demonstrate that they can make a very wet block, making them waterproof.

W. W. Williams, of the Williams Contracting Supply Company, of Columbus, O., makes headquarters at booths 17 to 21, and incidentally makes this hum while there.

A. A. Pauly, Youngstown, O., the celebrated inventor of the Pauly concrete tile machinery, is taking an active personal interest in the great cement show and is making his headquarters with the Chicago Structural Tile Company, which concern represents the Pauly system of construction and materials in Chicago and vicinity. Mr. Pauly looked over the show yesterday afternoon and pronounced it the greatest cement show that he has ever seen.



A. A. PAULY, THE MAGICIAN, WHOSE TILE MACHINERY HAS OPENED WIDER FIELDS OF USEFULNESS TO THE CONCRETE INDUSTRY.

The exhibit of the Atlas Portland Cement Co. is one of the most attractive at the show. The main booth itself is stocked with very high grade manufactured concrete in artistic revolving vases of mammoth size. Displacing panels of various colored concrete surfaces, made of different colored selected aggregates of Atlas white cement are shown. The Atlas company recognizes the growing importance of attractive treatment for exterior surfaces with cement plaster, etc., and the panels shown in these revolving vases are really inexpensive and practical for the use of the everyday user of cement in the daily work of his operations.

Another feature which is extremely attractive to the out of town visitor is the model farm in miniature, equipped throughout with concrete residence, barn, sheds and farm buildings of every description. Supplementing the model farm feature, the Atlas company are distributing to interested farmers and ranchers a book which contains detailed instructions of the methods by which all of these farm improvements can be built by the intelligent farmer and his ordinary farm hands by the use of Atlas cement and sand and gravel, which can usually be found on any extensive estate. It is an exceptionally interesting, practical exhibit and one that is doing no little good for the industry. On one of the panels of the Atlas exhibit is shown the correspondence between John R. Morron, president of the Atlas company, and Captain Boggs, of the technical staff of the Panama canal construction work, by which it is shown that the Atlas cement, which is used exclusively in the construction of the Panama canal, has given entire satisfaction throughout the construction of the biggest job of engineering work that was ever undertaken in the history of civilization. P. Austin Tones, in his energetic and systematic way, had charge of the Atlas exhibit, and the big undertaking only required a few hours, going forward with the precision of well regulated clock work, being all completed and ready for the opening of the show. C. C. Quincy and the full staff of the Chicago office of the Atlas company are on hand to extend the glad hand to the many friends and patrons who are accustomed to make themselves at home in the dignified altogether atmosphere of the Atlas booth.

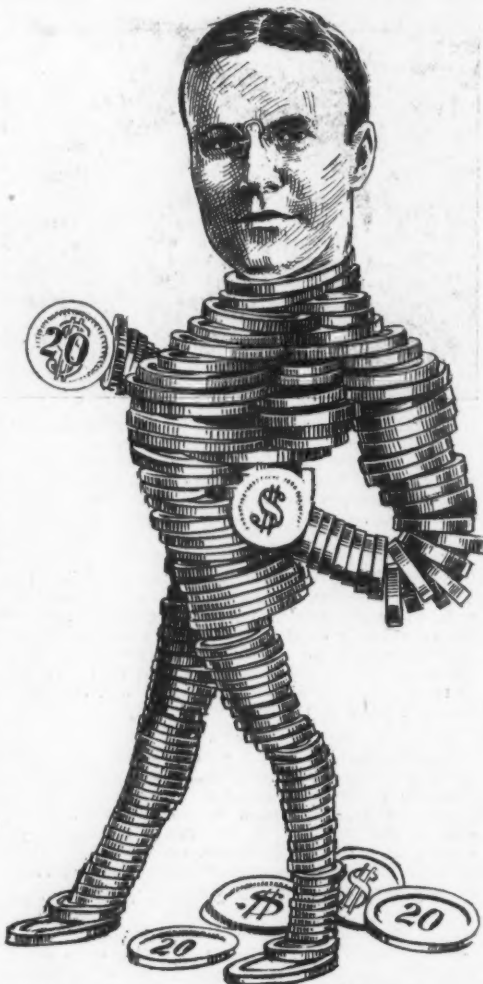
The Barrett Manufacturing Company's booth, in charge of H. B. Nichols, W. J. Walker and C. G. Wells, is a very interesting one from all standpoints. They have on exhibition roofing and waterproofing, and sub-floors and paving. It is worth while to visit their booth 7.

The Standard Scale & Supply Company have a large portion of the exhibit space in the Coliseum annex and are exhibiting about twenty different styles of their Eclipse Mixers at their store one block north of the Coliseum.

Booth 45 is attracting a great deal of attention from all visitors. This is where George W. DeSmet, 419 Chamber of Commerce, Chicago, is showing the various products handled by him. He is assisted by an able corps of gentlemen, as follows: Frank Miller, Jr., P. L. Biggins, C. C. Green, H. L. Fisher and A. C. Horn, of A. C. Horn & Co. In describing his exhibit Mr. DeSmet said: "The floor of my booth is made of Portland cement and is coated



D. RICHTER, THE CHICAGO REPRESENTATIVE OF THE ALPHA.



GOLD WILLIAMS, SALES AGENT MARQUETTE CEMENT MANUFACTURING CO., CHICAGO, AS SEEN WITH THE X-RAY.

with Symentrex (waterproof compound), which is one of the waterproofing materials I am handling, the others being Hydratine and Dehydratine, manufactured by the A. C. Horn Company, New York. I will have a mantel made of Caen Stone Cement, a product which I am also handling, and known as the Mouarque brand, manufactured by M. Tate, of Paris, France. I will exhibit my compressed cement tile, such as I am at present laying in the Hospital Building at the Naval Station, North Chicago, and I will also exhibit Vulcanite Portland cement and the various aggregates to be mixed with the same in the construction of concrete.

The Billings-Chapin Company, of Cleveland, Ohio, have a display at Booth 117, in charge of Norman E. Hills, C. E. Case and others. It consists of a set of concrete tiles coated one side with cement floor coating, Bilchaco, and on the reverse side with Drival coatings in various colors. They also have liquid samples of Drival and Bilchaco panels showing wall finishes, briquettes for demonstrating and plenty of color charts and literature.

The Cement Tile Machinery Company, of Waterloo, Iowa, have booths 92 and 93, in charge of J. H. Stewart, assisted by W. H. Stewart, W. P. Wells, W. L. Northrup, S. L. Norton, E. V. Haight, T. G. Spellman, Godfrey Gross, Lou T. Stratton and F. A. Roosa. The exhibit consists of one Model B Schenk Cement Drain Tile Machine, equipped to make cement drain tile in sizes ranging from 4" to 12", inclusive; a Perfection Concrete Mixer No. 2 on skids, intended for factory use; a new Four-Way Block Machine and easy tile molds, and a model of their Ideal brick, block and tile cars.

The Atlas Portland Cement Company has a very attractive booth, constructed in a way which immediately brings their "Atlas White" Portland cement to the visitors' notice, at the same time giving due prominence to the old reliable "Atlas." The booth is in charge of P. A. Tones, manager of the publicity department, and a force of salesmen under the direction of C. C. Quincy, manager of the western sales department, who are on hand to extend a cordial greeting to all.

In addition to this booth, headquarters are maintained at the Congress Hotel, where all friends and customers are heartily welcome.

The offices of the western division of the Atlas company have recently been moved from New York City to the Corn Exchange Bank Building, Chicago, and through this office all western business will hereafter be handled. Visitors to the show will be cordially received if they call at these new offices.

Sievert Bros., of Bloomville, O., have under contract and are building eleven mausoleums in Ohio. At the cement show Saturday they placed an order with W. W. Williams, of the Williams Contractors' Supply Company, of Columbus, O., for six No. 1 Koehring Concrete Mixers, which will be used in mixing the concrete for the building of the mausoleums. The Koehring Machine Company's booths, 17 to 21, had lively times last week.

The show this year is on a more elaborate scale than ever. More attention has been paid to the effect on the visitors, in other words. The environment is more artistic and while the exhibitors' displays are still the attraction the setting is much finer. It is very much like a fine oil painting which has been placed in a frame which brings out or enhances its qualities.

It is a question, however, if the limit has not been reached, for it is obviously impossible to go further with a temporary show. It would be vastly different if the exhibition was to be more permanent; then the various companies exhibiting could afford to make more elaborate and costly displays.

The German-American Portland Cement Works' exhibit is being shown by E. L. Cox, general sales agent, at booths 119 and 120. Mr. Cox is present and is assisted by John J. Duggan, C. A. Cole and W. Blomgier. They are showing a single span concrete arch bridge made from their product.

The W. B. Jones Boiler Company, of Streator, Ill., are exhibiting at Booths 291-292, in the balcony, adjustable steel sidewalk, curb and gutter forms, rotary steel floating and finishing tools and self-retaining straight edges for sidewalk work. J. M. Heltzel, who presides at the booth, is busy from morning until night showing interested visitors the many merits of the various exhibits.

Harold Simpson is there with the best display of Simpson cement molds and the products made therefrom that has ever been shown anywhere.

An attractive and a somewhat unusual exhibit is that of the Ricketson Mineral Paint Works. They are showing their mineral concrete colors and the pretty effects which can be had by the use of their colors on concrete work are great indeed.

Thomas Malloy, in Booth 278, in the balcony, exhibits the Malloy loading, proportioning and conveying concrete machines, and is creating a great deal of attention, as it is a new thing adapted for all the different branches of the concrete industry.

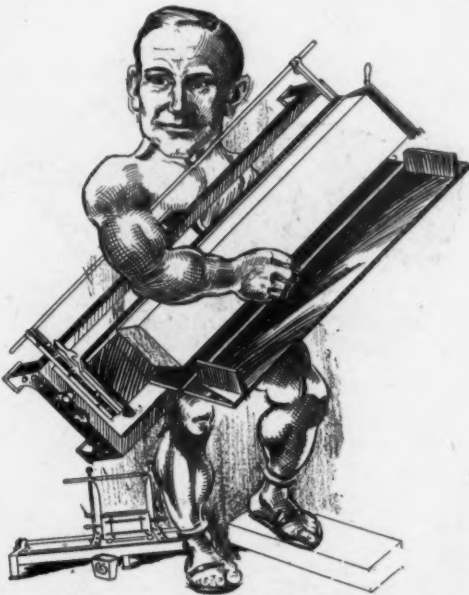


FRED PAULSON, OF THE LEHIGH, WHO WAS PREVENTED FROM GIVING AWAY APPLES.

One of the most familiar faces at every cement show that has ever been held is that of Al T. Bradley, president and general manager of the Century Cement Machine Company, of Rochester, N. Y. This concern builds the world famous Hercules block machine, which was one of the earliest machines of this kind to be perfected and it has steadily held its established place in the front part of the procession. Our artist has depicted "Hercules" Bradley as the physical expression of this well known figure of the cement industry of America. Hercules machines and the man who has always been in the foreground as the Hercules promoter have made good in big numbers, and their methods of doing business have been a credit to the industry, and at the same time profitable, for the American public appreciate fair dealing and a sound business proposition in such a way. If you do not believe that Mr. Bradley is a real Hercules, why, lay it on the machine, for it certainly is. Their exhibit is at booth No. 47 and Mr. Bradley is holding informal receptions with his many old friends and customers who have used the Hercules line of block making machinery with gratifying success.

At booths 201 and 202 George C. Marsh, assisted by W. G. Jenkins and C. C. Quinn, is taking good care of all visitors who are much interested in the exhibit of the Marsh Company, 975 Old Colony Building, Chicago. They are showing the "National" Power Tile Machine for making large concrete drain tile with power. They also show building block machines, hand tile molds and cement finishers' tools.

Robert W. Hunt & Co. have booth 16, and this is presided over by John E. Moore and H. H. Mor-



"HERCULES" BRADLEY, OF ROCHESTER, N. Y., WITH HIS WELL-KNOWN MACHINE.

gan, assisted by L. V. Rice, C. C. Whittier, W. L. Reeves and others. They explain the workings of their model testing laboratory, in which the customary tests are made in connection with the inspection of cement. These tests are being made for the benefit of those interested, and pamphlets, including the standard of the American Society for Testing Materials, are given on request.

The Ceresit Waterproofing Company, 195 Clark street, Chicago, have an exhibit at booth 42 in charge of P. H. Hansen, assisted by F. J. Sponmeyer and R. H. Schroandt. They are demonstrating the water repelling qualities of ceresit when cement mortar and concrete are subjected to water pressure.

Leroy A. Kling, sales manager of the Eureka Stone & Ore Crusher Company, of Cedar Rapids, Iowa, extends a glad hand to visitors at booth 178, where he and W. J. Kouvalinka, vice-president of the company, are demonstrating a No. 1 B Mitchell improved crusher, operating with a 5-h. p. motor crushing stone and gravel to all sizes from 2½ in. down to sand. They also have in operation a No. 0 Mitchell crusher and a No. 3 A 11 steel Eureka crusher with a jaw opening 7x18 in.

If you want to see something remarkable in a



GEORGE C. MARSH, OF CHICAGO, THE GREATEST MIXER OF THEM ALL.

cement machine, go and see the Fisher Hydraulic machine at booth 90. You can pour on it after it comes out of the machine and watch it stand on the surface. It cannot do otherwise as a pressure of thirty-five tons is applied on each block. "That is concrete." Do not miss it if you are interested in concrete construction and intend buying a good machine. You must see the "Fisher Hydraulic" to appreciate its value. The Fisher Hydraulic Stone Machine Company's exhibit is in charge of W. H. Fisher, assisted by C. M. Fisher, A. C. P. Zenner and A. C. Raymond.

The Malloy Proportioning Conveying and Loading machine is worth seeing. It is exhibited by Thos. Malloy and John J. Gillman at booth No. 278. It is something new. The machine takes material direct from the wagon, doing away with wheeling and shoveling.

M. E. Gordon, the decorator, called at the booth of Rock Products and stated that he would be at the cement shows at Minneapolis, Minn., March 1st, and at Toronto, Canada, March 6th, next.

C. D. Walworth, general sales agent of the Waterloo Cement Machine Corporation, has a busy time of it greeting and entertaining his friends at booth 197.

The "Hole in the Wall" in the Cement Show, which people comes miles to see, is the wall encircling the booth of the Hobbs Concrete Machinery Co., of Detroit. The wall is made of real broken ashlar blocks made on the composition face plate brick machine which they have on exhibit. H. F. Hobbs said one block was missing when the wall was set up, and people now comment on this fact when they come to the booth.

The Locke Drill Company of New York exhibits in its booth No. 239 its new electric drill for making small holes in concrete, brick, floor or wall tiles,



FRED J. MORSE, PUTTING ON A COAT OF CEMENT COATING ON THE MOON.

stone or other hard material requiring a percussion type of drill. B. E. Scrivener, of the sales department of the company, is in charge of the exhibit.

One display which will attract considerable attention from the lovers of the artistic and beautiful is the art display in the balcony, in charge of Howard Allen, of the publicity bureau of the Universal Portland Cement Co. It consists of models of Lorado Taft's famous fountains and statues which were prepared for the Midway in Jackson Park, Chicago. Among them are the Fountain of Time, the Blind, and the Fountain of Creation.

Urschel Bates Valve Bag Company have an exhibit in the balcony, at the south end of the Coliseum, where Mr. Price, with an able corps of assistants and coöperating friends, is entertaining the cement plasterers and lime manufacturers and users with the value of the Bates valve bag, which closes without tying with a string, thereby introducing an economy which was never attempted until the automatic valve was invented. The Urschel Bates Valve Bag, either in paper or cloth, is now well established as a receptacle for pulverised building materials. Their exhibit, as usual on these occasions, attracts a host of their friends and patrons.

The Sandusky Portland Cement Company has its exhibit in booths 43 and 44. A. B. Newberry is in charge, assisted by R. R. Fish, A. B. Nelson, L. B. Stuart and F. C. Printy. They have a very beautiful exhibit showing an Italian garden with an ornamental wall, colonnades, fountain, statuary and ornamental vases. The exhibit is executed in



B. H. RADER, EASTERN SALES MANAGER OF THE UNIVERSAL PORTLAND CEMENT CO., WHO IS MAKING THINGS HUM AT PITTSBURG.

medium white Portland cement. The base of the fountain is waterproofed with Medusa waterproofing. Those in charge are giving a demonstration of Medusa waterproofing and waterproof cement.

M. H. Reed is in charge of the Standard Scale & Supply Company's exhibit in booths 199-200, assisted by Joseph Simpson, W. A. Browning, and F. F. Gillett. The exhibition is comprised of their concrete mixers on trucks, with steam engine and boiler, and a gasoline attachment. They also have a display at their store one block north of the Coliseum, where over twenty-five mixers are on exhibition.

The Chicago Builders' Specialties Company is in charge of the Marsh-Capron Manufacturing Company's spaces, 52 and 53. They say the whole bunch will be there. The exhibit will show the rail track and tilting mixers, 1911 models, which are an improvement over the old ones. The tilting mixer is mounted with a gasoline engine. The rail track is mounted with steam engine and boiler and is run for the show by an electric motor, temporarily arranged beneath the machine.

"Eclipse" has become the motto of M. H. Reed, in charge of the Standard Scale & Supply Company's booths, showing the Eclipse concrete mixers. These machines are being run with electric power during the show and attract a large crowd of people, who like to see the wheels go round.

At the U. S. Gypsum Company's booth are W. H. Price, S. H. Beard, R. E. Pangham and W. C. Price. Will H. Price had charge of constructing the exhibit and he deserves a lot of plaudits. The exhibit shows samples of their new Sackett Plaster Board, their fireproof plaster stud, gypsinite and samples of all their adamant plasters. Their booth will show a person what's what in his house on the inner side. Take a little stroll over their way.

J. E. Polworth, assisted by his brother, is showing Tesco marble on the balcony. Their exhibit is very interesting to the general public. The home of Tesco marble is at Milwaukee, but they are making arrangements to install plants for the manufacture of this beautiful material all over the country. J. E. Polworth is quite a lecturer and no doubt after he gets thoroughly warmed up will give some of his famous lectures which he delivered at the New York show.

The joint exhibit of the Carnegie Steel Company and the Illinois Steel Company at the south end of the balcony in the Coliseum presents an exceptionally handsome view. The draping of the national colors at the back, the brass railing enclosing the large spaces in which samples in glass cases of every thing that these two great companies manufacture,



"LEW" THAYER GIVING A PRACTICAL DEMONSTRATION OF HOW TO MAKE MONEY WITH BRICKS.

is attracting crowds of visitors; particularly that part of the exhibit of the piling and reinforcing bars for use in concrete construction. It is the cosiest and roomiest spot in the cement show, with its vases filled with flowers and palms distributed in the enclosure. Chas. L. Wood and D. E. Sawyer preside over this exhibit.

E. A. Velde, manager, and F. R. Mason, assistant manager, of the Universal Crusher Company, Cedar Rapids, Iowa, at Booth 126 are commencing to show the strain they have been under since the opening of the Cement Show, showing the crushing and elevating machinery to crowds of visitors daily, but their spirit is undaunted, and the smiles of both grow broader with every sale they make.

M. C. Robinson, of the Girard Cement Company, Girard, Ill., was a visitor at the show.

Mr. West, chief engineer, Lincoln Park Board, was at the show Saturday and expressed himself as justly proud of the compliment paid him by the executive committee in displaying his concrete lamp posts at the show.

Mr. Spindler, of the Decorators' Supply Co., who made the interior decorations of the show, has been too busy so far to even visit the Coliseum. He will be with us today, however, and will share the pleasure we all have in viewing this excellent piece of work.

The Chicago Portland Cement Company is at booths 81 and 82 on the main floor. The space is



I. L. MITCHELL, EUREKA STONE & ORE CRUSHER CO., CEDAR RAPIDS, IOWA.

surrounded by an ornamental concrete wall containing an artistically modeled fountain. The furniture consists of chairs, benches, mantels and tables cast with Chicago AA Portland Cement from models of Louis XVI design. The floor of the exhibit will be elevated three inches and will be built by Terrazzo mosaic, a preparation of Chicago AA and crushed granite.

Horace B. Kimble, of the Kent Mill Co., of New York, well known pulverizer expert, is here attending the show. The Kent Mill Co. are manufacturers of the celebrated "Maxecon" grinder used in hundreds of the leading cement plants here and abroad.

F. C. Printy, of the Sandusky Portland Cement Co., together with the only waterproof Fish that was ever discovered, are working hard with the beautiful display of the Sandusky Portland Cement Co. The trucking facilities were quite inadequate towards the close of the day Thursday, so that the exhibit was incomplete on the opening night. However, the main part of the booth was decorated with art cement goods, made from Sandusky "White" and "Standard" Sandusky cement in extremely handsome proportions and artistic lines. Good fellowship was the main thing exhibited on



JOSEPH E. POLLWORTH, TESCO PRODUCTS CO., MILWAUKEE, WIS.

the opening night, but with their booth complete, Medusa waterproofing, together with the two kinds of cement, will be the pith of this beautiful exhibit, which is located at booths 43 and 44 in the center of the first main aisle.

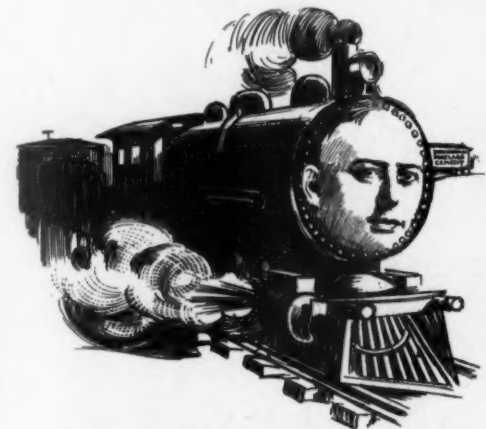
Harry S. Doyle is in charge of the American Steel & Wire Company's exhibit, assisted by B. S. Pease and O. T. Allen. Their exhibit pictures a skyscraper in course of construction, and from the amount of interest created, modern methods of reinforced concrete construction are interesting to the public as well as to the big engineers and contractors.

W. K. Dunn, superintendent of the Vulcanite Portland Cement Company, is showing Dunn's uniform pulverized fuel feeding device in the Lehigh Clutch Company's space.

S. A. Williams, Jr., is in charge of booth 194, where the H. B. Sackett Screen & Chute Company, of Chicago, have their exhibit. Williams is being assisted by O. A. Matthews. They are showing a dump car, a dump bucket, a concrete cart, a turntable and a portable switch, a interesting exhibit.

The Harold L. Bond Company's exhibit is at Booth 41, in charge of George S. Hedge, assisted by Joseph F. Rose. The exhibit consists of Rose concrete spades, Andrews concrete tampers, wire rope blocks, special picks and Felton's conduit couplings. The many interested visitors have kept Mr. Hedge and his assistant busy.

J. E. Taylor, representing the West Jersey Bag Company, arrived in Chicago Sunday and was taking a general view of the show yesterday. He is much



"BIG BEN" AFFLECK, THE HUMAN STEAM ENGINE OF THE UNIVERSAL.

pleased with it. He will stay to the end of the show, introducing in Chicago his new waterproof open mouth bag, which can be tied with a string. This is an entirely new thing, a new process which the West Jersey Bag Company, of Camden, discovered only recently, treating the paper so that it can be tied with a string, which heretofore could not be done.

The Ohio Post Mold Company have Booth 171, where E. S. Smith and A. M. Smith are entertaining a stream of visitors who are greatly interested in their metal molds for making concrete fence posts. E. S. Smith says there has been more real business interest in their product at this show than there was at the New York Cement Show and they have been taking a lot of orders even on the first day.

The Hobbs Concrete Machinery Company, of Detroit, Mich., is exhibiting at Booths 128 and 129 four Hobbs block machines. One is shown as an exhibition machine, one as a 24-inch machine, one as a 16-inch machine, and one as a veneer machine. The booths are enclosed by two walls and four piers of real broken ashlar blockwork. They are in charge of H. F. Hobbs, assisted by Walter Greenberg and F. S. Phipps. Mr. Hobbs has been making some big sales of machinery.

H. C. England, of St. Francisville, Ill., the man who is creating a great deal of interest in building circles with his process for making marble faced concrete brick, was all around the show yesterday looking things over. Illustrations of Mr. England's excellent product have appeared in recent issues of Rock Products.

NATIONAL BUILDERS' SUPPLY ASSOCIATION.

(Continued from Page 30.)

He analyzed, in the most expert and convincing way, the causes and reasons for trade abuses and bad trade conditions, showing that to a great extent these things grow from the habitual tendencies of business men to follow suit or follow the lead of exactly what some other person has done. With apt illustrations and carefully worded descriptions he made word pictures of the trend of human influence that lead business men into the folly of mistreating the advantages, rights and equities of other business men.

Mr. Green is a firm believer in the principle of co-operation and has confidence in the ideal of live and let live, feeling that the establishment of mutual confidence in the organization is the most potent factor in making the work of trade organizations efficient and successful. He used as a comparison the political organizations of this country, beginning with the municipal or local organizations. The state or grouping of many municipalities into one compact influence and the grouping of this larger division or state organization into one federal or national organization. By this analysis, he brought out that trades composed of people having the same interests in their business could co-operate, first locally, then as the state and again as the national organization. He brought out the fact that people naturally turn towards organization to overcome the evils which arise in their surroundings by reason of the proclivity for copying or retaliation and the wrongful or injudicious acts of competitors.

Mr. Green spoke on the topic of the value of figuring the basis of profits intelligently before one could conduct business on profitable basis. He showed that the cost of doing business should always be estimated upon the selling price of the commodity and not upon the buying or investment price of that commodity.

The speaker said that the days of miracles were past, that all the profit and emolument that a man gains in these days is what comes by close application and arduous labor. On this point, he elaborated to some extent with word pictures of business opportunities and the everyday round of opportunities which are always so much alike, and in conclusion he made the following effective simile of the present lack of anything miraculous:

"If one should walk along the road and hear a bird singing a beautiful tune, that would not be a miracle. If he proceeded farther and saw a spotted cow grazing on the grass for pasture, that would not be a miracle. Farther along the same road if a thistle grew in the fence corner, that would not be a miracle. No, none of these would be miracles, although the conditions by which they occurred might be wonderful, yet they would be natural and hence not miraculous, but if that same cow could be sitting on that same thistle and singing that same sweet tune that the bird had sung before, now that would be a miracle."

At the close of Mr. Green's remarks, which will be published in full later from the stenographic reports, Gordon Willis arose and moved a vote of thanks for the edifying and uplifting address. This motion was carried by acclamation as a fitting compliment to the speaker.

AFTERNOON, FEBRUARY 21.

President Charles Warner called the meeting to order promptly at 2:30, according to previous announcement, and introduced the first speaker in the person of Harry N. Tolles, official lecturer of the Sheldon School, of Chicago, Ill. This paper was entitled "The Man Element in Practical Sales Results." It was a polished and logical lecture, replete in well chosen metaphor and practical "chalk talk," all bearing upon the personal equation of self confidence and human magnetism which is often derived from enthusiasm and whole-hearted interest in the trade itself, were discussed as the basic factors of success. All of this was very interesting and instructive to many of the delegates, who expressed their appreciation with hearty applause.

Richard Kind, of Toledo, introduced a resolution in his straightforward way, to have a full report of all the records of the association reviewed by a special committee and reported to the executive committee, and also to the entire membership. There being no objection, the president provided such committee by appointment.

By the middle of the afternoon it became apparent that the active committees on nominations, on resolutions, etc., that were appointed in the morning meeting were laboring with the problems of their respective duties.

E. F. Knight, sales manager of the Bradford



H. H. HALLIDAY, OF CAIRO, ILL., ON THE JOB.

Pressed Brick Co., Bradford, Pa., was the next speaker introduced.

BUILDING BRICK AS A FACTOR IN NATIONAL CONSERVATION.

BY E. F. KNIGHT.

Mr. Chairman and Gentlemen of the Convention: I do not feel as a stranger would feel in being called upon to speak from this platform and to this convention. About one year ago in the same city, in the same hotel, and in the same room, I first became acquainted with some of the members of the N. B. S. A. The secretary, president and many of the members at that time extended a very cordial greeting to me, and I have since formed a closer acquaintance with many of the members whom I had not known up to that time. The Bradford Pressed brick, whom I have the honor to represent, have long enjoyed a very gratifying trade with many of the members of your association, particularly in the eastern part of the country, and I am convinced that great good can be accomplished by a closer acquaintance between the manufacturers and the dealers, such as this association advocates. We should one and all remember that it is impossible to bring about immediately the conditions which each one of us may consider the ideal arrangement, but we must be content from year to year if a substantial advancement has been made towards the goal for which we are striving.

Once upon a time in a far off country there lived an old pig with her family of little ones, and finding that the living expenses were constantly increasing and that she was unable to properly care for all of her family, she selected the three eldest and presumably the wisest of her family and instructed them to go forth and root for themselves. The three little pigs, after saying good-bye to home and friends, went out into the world, even as you and I, and the story goes: The first little pig met a man with a load of straw, and he said, "Please, man, give me that straw to build me a house with," and the man did; and the little pig built a house of straw. And by and by a wolf came to the door. He said, "Little pig, let me come in."



WALTER C. SCHULZ, HOBOKEN, N. J., PRESIDENT NEW JERSEY RETAILERS.

and the little pig said, "No, by the hair of my chinny chin chin." Then the wolf said, "Then I'll huff and I'll puff, and I'll blow your house in," and he did; and he ate up the foolish little pig that had built his house of straw.

And the second little pig going forth met a man with a load of boards. He said, "Please, man, give me those boards to build me a house with," and the man did; and the little pig built him a house. And by and by the wolf came to his door and said, "Little pig, let me come in," and the sad story was again repeated; and the foolish little pig number two was no more.

But the third little pig was a wiser pig. He passed up the man with the load of straw and the man with the boards, and finally he met a man with a load of brick. He said, "Please, man, give me those brick to build me a house with, and the man did; and the little pig built a house of brick. And by and by the wolf came to his door and said, "Little pig, let me come in," and the pig said no, and the wolf said, "Then I'll huff and I'll puff, and I'll blow your house in," but he found that while he had been able to prevail against the house of straw and the house of boards, that the good house of brick withstood all of his assaults; and the little pig was able to live out his life to a good age in his house of brick. Now, when this story came to the ears of the king he issued a royal decree, ordering that when this little pig became of age he should not be known as a "Common Hog," but was allowed to write after his name "W. O. P.," which meant "Wise Old Pig."

My friends, I never read this little story without thinking that there is a lesson in it for the people of America, and for you and me, and it is with the idea of being able to do something here, which may eventually be of value in discouraging such foolish building operations as we now see on every hand that has caused me to consent to address you on this topic.

A young married couple moved to Montana immediately after their marriage and began raising cattle. As he was an industrious man, he prospered, and soon he and his wife were able to build them a home. There being no brick man on the ground, they built their home of wood, and when the house was completed the husband left on a trip to Chicago with a shipment of cattle.

One morning the neighbors noticed the house in flames and though every man in the vicinity rushed to their assistance, the home was in ruins before they could arrive.

The poor woman was found in the front yard wringing her hands and crying. "Oh, just think of our beautiful house with the new dining room table and the new carpet in the sitting room and the new pictures on the wall, and I had the picture of Peter and the apostles and the Virgin Mary, and they are now all burned up and gone to hell and not a dollar of insurance."

I am afraid that the subject about which I have undertaken to talk this afternoon must appear to be a very dry one to most of you. At the present time we are more or less familiar with the campaign being conducted for the conservation of our national resources. This country has been blessed with such wonderful national resources that we have had no appreciation of their value and have gone about our business like a drunken sailor. For every dollar's worth of value which we have utilized we have wasted two, and the big problems with which we are now face to face are caused by such a wasteful policy. But if there is one thing of more importance at the present time than anything else it is the conservation of our present forests. All of you can remember the day but a few years ago when lumber for building operations was cheap and plentiful, and you all know what the prices are today. This condition is, of course, due to one thing—the rapid disappearance of our forest reserves. Each one who gives this matter a thought cannot but be appalled and ask himself, "What can I do to prevent a further useless depletion of our standing timber?"

You are doubtless familiar with the effort being made by public and private interests to reforest lands now barren, but many years must elapse and millions of dollars must be spent before we could even begin to realize the benefits which we have lightly thrown away. It is not too late even now to take some steps which will conserve the standing timber. Does it not seem absurd and foolish to spend so much time, energy and money in planting new forests when the same attention given to the forests already standing will preserve them for ourselves and our posterity.

The government is already moving actively in this direction and in the forest preserves, already set apart by the national government, have forest rangers, whose business it is to protect the timber, but the greatest menace of our present forests is the profits that can be realized and are being realized by the lumber manufacturers.

How long do you think that the present indiscriminate raid on the forests would continue if the demand now made for lumber should be cut in two? This brings us face to face with our own particular interest in the matter. The report of the United States geological survey entitled "Forest Products for 1908" shows the following table concerning the percentage of lumber consumption for the United States during the year:

Furniture	17
Boxes	086
Railroad transportation	07
Implements and vehicles	048
Shipbuilding	016
Miscellaneous	01

Total of the above items 40 per cent. The remaining 60 per cent is used in the construction of buildings, and I think that you will doubtless agree with me when I state that probably 75 per cent of the amount now used in that trade could be saved if we were to stop building wooden houses and use instead noncombustible materials, such as brick, stone, terra cotta, iron, steel and cement. Just imagine for a moment what it would mean to us if we were able to bring about such a condition, which, according to statistics, would increase the sale of face brick 500 per cent, and, my friends, I am here to state that we can bring about such a condition if we are willing to use the arguments at our hand. We cannot dodge the evil effects on us as a nation and to ourselves as individuals, if we allow present conditions to continue.

Aside from the destruction of our forests, let us look at the matter from another angle. I suppose that every man here carries insurance on his buildings, and if there is a monopoly existing at the present time in any industry there is in the insurance business. Let us not curse the insurance companies for taking advantage of our position, but rather let us see what can be done to

make unnecessary the enormous insurance premiums which we are now paying.

A recent report of the state department contains a well written report by Consul Joseph L. Brittain, of Prague, Bohemia.

He says that in the last three years the loss from fire has been less than \$20,000 annually in that city and that it has been fifteen years since a life was lost by fire. In the ordinary American city of half a million population the fire loss would average at least \$1,000,000 a year, while the deaths from fire would have been numerous.

Prague's immunity from loss is chiefly due to the superior construction required by law, the careful habits of the people and the responsibility that fire damage entails upon the owner of property. Most of the buildings are of brick or stone with tile roofs. The hallways are usually of concrete, the stairs of stone, and the kitchen floors are built of concrete, with tile wainscoting.

The erection of hazardous buildings is not permitted, and when a man is so unfortunate as to have a fire he is looked upon as an offender in the eyes of the law and is held responsible for any damage that may be done to adjoining property. The per capita fire loss of \$3 in American cities as compared with such a record as this shows the enormous price this country is paying, both in life and property, for its hazardous construction and general carelessness.

At the November meeting of the Philadelphia Chapter of the American Institute of Architects one of the speakers made some remarks regarding the fire losses of the country. He said substantially as follows:

"The curtailment of the enormous fire losses which we have in our country will not be accomplished until the subject of fire prevention and protection has received the same consideration by the general public that has been given to the stamping out of contagious diseases. How long would the cities of any community tolerate a condition that would be conducive to the spreading of a contagious disease? Unfortunately, the general public is not aware of the conditions existing in many buildings throughout the land, which could justly be called 'death traps,' and cause as much heartache and sorrow as the average disease epidemic; in fact, the chances of a fight for life are far less in many existing 'death traps' than they would be in an epidemic of disease."

We want to close this argument as far as the insurance tax is concerned by a quotation from the December issue of the Chicago Evening Post as follows:

"To date this half year we've done \$514,000,000 worth of new buildings and repairs. This looks good and prosperous and progressive. It means approximately \$1,000,000,000 of construction for the year."

"But look upon the reverse of the picture. If nothing extraordinary happens, no abnormal conflagration (the Baltimore and San Francisco fires were but two years apart) our year's fire losses will total up about 1,700 people burned to death, 165,000 buildings destroyed and \$280,000,000 worth of property destroyed. The insurance companies recoup us in part for the loss, but we pay them \$3 in premiums for every dollar we get out of them, and then our fire departments, water supply and such items cost us \$300,000,000 more in total a net loss or cost of \$664,000,000 for fire. If the billion dollars expended in new buildings means progress, this terrific loss represents retrogression, asinine folly and gross stupidity."

Think of it, in this year of grace, in this splendid country where we have noncombustible materials at low cost, and where we claim that most people are superlatively intelligent, over 61 per cent of all new building done was of wood, actual fire traps, tinder boxes, fresh fuel for fire.

The insurance people are not really anxious, for good building conflagrations hurt them, but ordinary fires are profitable to them. Our cities are afraid to pass too stringent laws compelling good construction, and our people are so accustomed to second and third rate buildings, kindling wood affairs, that they really have the notion that that is the way to build—and there you are.

Practically the cure rests with the individual investor and with our city administrations. One might go back still farther and assert that it rests with the people as a whole, but that is hardly a prudent way to put it, for if the people ever with any vividness the heavy tax which our flimsy construction places upon each and every one of them, we might have mobs and barricades in the streets until stupid misrule of such builders was brought to a summary end.

Now, gentlemen, if I have not wearied you, let us for a moment consider just where our own particular interests lie in this matter. Any retail dealer who is so eager to make his own profit as to forget his customer's profit is not doing business in a fair way. The best dealer is one who is as careful about the service given as the profit earned.

We must constitute ourselves counsellors to the American people and see that every prospective builder is made aware of the folly of wooden construction and is shown that his home can be built of brick at first cost but slightly higher than wood and should be convinced that the increase in value of his lot will be much more by the erection of a brick house than of wood. The Building Brick Association of America recently conducted a competition with the purpose in mind of ascertaining the comparative cost of a brick house and a studded house with clapboards, and the result was interesting to any brick maker or brick dealer. In New England lumber is still much cheaper than in some portions of the country, owing to water routes, and the forests of Maine and Canada, while face brick is comparatively dear, yet the average of the ten bids showed the cost of the brick house faced with face brick to be but 13 per cent higher than a studded wall, while comparing the two most favorable bids a difference of only 10 per cent in cost is shown.

Now, gentlemen, how many people would continue to build of frame if they knew these facts?

I have taken your time today discussing how this matter should appeal to us from a public standpoint, and I now desire for a moment to call your attention to our own peculiar position regarding the reform which I have advocated. It is not often given to a trade or a profession to be in such a fortunate position as we are placed, not only is it our duty to bring before our neighbors the folly of continuing the construction of residences built of combustible materials, but our own profit lies in just such an action on our part.

It is my belief that every dealer in brick, mortar, lime, etc., should have such arguments as these at his fingers' ends. He should make it a point to keep in touch with every operation coming on in his territory and having learned of such an operation should never rest until the owner is convinced of the wisdom of using non-combustible material. Let us make a noise about our



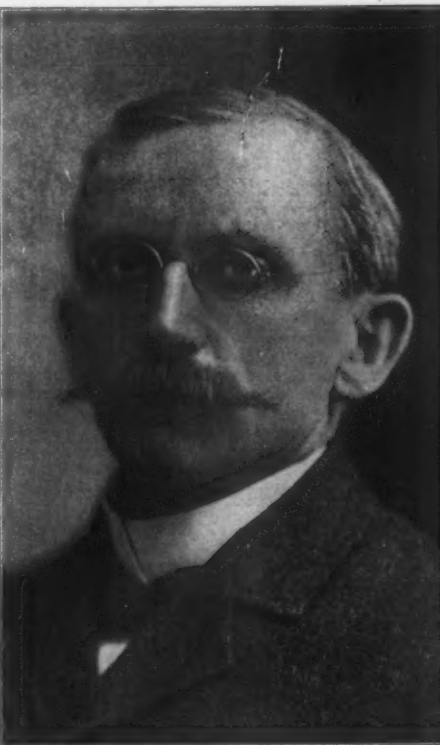
M. A. REEBE, NIAGARA GYPSUM CO., BUFFALO, NEW YORK.

business. I recently noticed a postal card on which was printed the following: "When a duck lays an egg she waddles away and says nothing; when a hen lays an egg, she immediately proceeds to make a great noise about it. Hence the great popularity of hen's eggs."

The dealer who is content to sit in his office and wait for his customers to come to him with the business will never last very long in the modern competitive conditions. I am more or less familiar with the conditions that exist in your business. I have, for instance, in my mind the example of a man who has been in this business for many years. His idea of doing business was to keep a stock of masons' materials on hand and to serve who might come to him looking for such materials. He has been in business for many years and has but little competition, yet he has not prospered as he should have done because he has failed to take advantage of his position. He has allowed his neighbors to continue building fire traps, when a word from him might have caused them to have built more wisely, with consequent advantage to himself.

The average man upon deciding to build has very little idea of the facts with which you are familiar. His father, his brother and his neighbors have always lived in wooden houses. He has the idea that the construction of a brick house means a much greater expenditure than the cost of building of frame.

Here is the opportunity for the manufacturer or dealer of noncombustible materials. The Building Brick Manufacturers are ready to furnish all who are interested booklets with plans, showing that the cost at the present time of building of frame is but slightly cheaper than the cost of brick construction.



RICHARD KIND, TOLEDO, OHIO.

The high prices of lumber cannot fail to assist in proving your arguments, and I hope that all of you will go home from this convention with a determination to do all in your power to bring about a reform in our methods of building.

"Rome was not built in a day," nor can we hope to bring about the above desirable condition at once, but natural causes are already assisting us, and it would be worse than folly not to take advantage of them.

There is every reason why the dealer in masons' materials should be the teacher and leader in this movement.

When you get back home make up your mind to keep in touch with the building operations in your territory as fast as they mature. Do not be satisfied to accept an order for a few hundred brick for chimneys with perhaps a few hundred more for mantels, with a few barrels of lime, but determine rather to attempt to so influence the prospective builder that he will build more wisely and will be coming to you for all the materials which will enter into his completed home.

Gentlemen, the opportunity is yours, but energetic work and patience is required.

The manufacturers of the country are eternally looking for the man who can get the business in their respective localities. Not only are they looking for such persons, but they are ready to co-operate with them and assist them in every way to produce such results.

The Building Brick Association of America is an association of about 250 of the leading brick manufacturers and brick sellers of the country. It is the intention of this association to conduct an advertising campaign in the magazines of the country, calling the attention of all prospective builders to the value and virtue of building brick in the construction of their homes. Booklets and pamphlets will be distributed, setting forth the reasons why brick should be used, and this organization will only be too glad to co-operate with you in bringing about this great reform.

For more specific information I have here five booklets: "A Revolution in Building Materials," by H. S. Chapin; "The Brick House Safe From Fire," "Brick or Frame—Which," "The Maintenance of the Brick House," "The Beauty of the Brick House." I will be glad to have the names of any of you who desire these pamphlets and to see that you are furnished with a copy of them.

And now, gentlemen, in bringing my address to a close I desire to extend to you my thanks for the invitation to address you, for the attention you have given me, and I hope that what I have called to your attention may prove of permanent value to you.

It has been a pleasure to address you and I hope to have the pleasure of meeting you all personally.

By persuading your customers to stop building wooden houses you will assist the great work of conserving our forest reserves, will decrease the great fire loss and attendant loss of life with which we are cursed, and if you can get him to use brick instead you will in the first case double and treble your own business and will have conferred a positive and lasting benefit upon him.

Brick is easily adapted to any building condition, lends itself readily to the architect and builder, who may desire individuality in their creations, and is at once the most modern and the most ancient of building materials.

Granite disintegrates and crumbles into particles of mica, quartz and feldspar. Marble soon moulders into dust of carbonate of lime, but hard, well-burned clay endures forever in the ancient landmarks of mankind.

Mr. Knight's paper made a pronounced impression upon the audience, which listened to every word of the interesting paper with rapt attention.

At this point a very pleasant diversion was introduced, Miss Olive Kackley, of Chicago, a professional dramatic entertainer. She gave a number of recitations, witty and full of sparkling human sentiment. A woman's voice amidst such a large concourse of the male persuasion is always welcome. In this case the speaker was in fine voice, and accomplished in all the arts of pleasingly making a finished impression. She swayed the composite heart of her audience at will from laughter to pathos, and at the end of her stunt the young lady was vociferously applauded.

R. C. Penfield's Paper on Brick.

R. C. Penfield, president of the American Clay Machinery Co., Bucyrus, Ohio, was the next speaker, resuming the deeply interesting subject of "Building Brick and Its Importance to the Supply Dealers' Trade." Mr. Penfield is one of the leading successful business men of the country, the acknowledged leader of the great clay working industries of America. Beside this, he is a graceful speaker on all occasions, but when the subject is brick or clay products his familiarity with all the details of the particular industries in which his personal efforts have wrought such a complete revolution, he spreads a veritable feast of information. Mr. Penfield briefly joined his remarks to the subject matter of Mr. Knight's paper, and went at once into the economic phases of brick, the building material of the ancients, of the present as well as of the future. Chicago, once reduced to ashes, is the greatest living example of modern brick in its reconstruction. With the fire loss ratio of the whole country at \$2.00 per capita, in this city it is less than \$1.75, the whole difference being entirely due to the use of brick. In England, where brick is more universally used for all kinds of buildings, the fire loss is only 25 cents per capita per annum. There is no place where brick making has reached such perfection and such economy as in this city of Chicago. (The speaker omitted to state that his own inventions and improvements have been the means of creating this condition.)

A stereopticon was in service to illustrate the speaker's remarks. The old time system of piling brick in the kiln was the first picture thrown on

the screen. Brick pilers throwing pairs and fours from the car decks to the upper levels of the kiln were shown. The motion picture worked so perfectly that it was like looking at the actual work. It is the same old way that brick have been piled from the days of ancient Babylon down to the present. The following pictures showed the new apparatus recently installed by the Illinois Brick Co. to handle sections of several tons, in each operation requiring no more than a minute. This piling device is now being made of such a size as to take the entire contents of a drying car, amounting to nearly two tons, in a single operation. This is known as the Penfield System of Brick Piling, and is the most revolutionary improvement ever introduced into the venerable brick industry. The speaker announced the intention of the clay products interests to give a magnificent international exposition of brick and other clay products and their applications within a year from the present date—and probably in Chicago. He took occasion on behalf of the clay interests to extend a cordial invitation to all the builders' supply dealers to attend and take part in the great exposition. At this point the stereopticon showed a number of views taken at a recent clay products exhibition held in London. Fine exhibits of the British brick makers and pottery manufacturers followed one after another. King George V, in company with his royal mother, were seen in one of the pictures, showing the interest of people of high estate in the clay industries of Britain.

The closing pictures consisted of brick making scenes in modern Egypt, where women are employed as hod carriers and clay diggers.

Taken as a whole Mr. Penfield's illustrated lecture was at once the most attractive and instructive feature of the session, and was so voted by every one present with hearty applause.

The hour of adjournment having arrived, President Warner announced the resumption of association business at 9:30 Wednesday morning.

WEDNESDAY MORNING, FEBRUARY 22.

President Charles Warner opened the meeting with a brief and appropriate little speech and the gold room was full of dealers and their friends to listen to the paper of Mr. Jordan, who is the controller of the well known supply house of Charles Warner Co.

"Cost System for the Retail Yard," by Wm. A. Jordan, the speaker, had prepared his paper in pamphlet form so as to provide a copy for each of the delegates, and using the printed text he delivered the paper with oral explanations to fully explain the modus operandi of the system which has been built up by the experience of the accountant who handles the extensive and complicated details of the house of Warner. Mr. Jordan explained that the pamphlet referred to the yards of the Warner company located at Wilmington, Del., which is divided by the Brandywine river, one section of the yard being north of the river and the other section south of the river. These two being respectively known and designated as north and south yard, both of which are equipped with yard house, sheds, piling space, etc., with distinct location for the nine principal divisions of the material which go to make up the supply business, together with sub-divisions under these nine general grand divisions, in some cases amounting to twenty or more items under one division.

This yard was chosen as an example for the paper because it presents the widest scope of builders' supply operations perhaps in this country, for in addition to the special and standard goods which are handled by nearly every dealer in builders' supplies, the Wilmington yards carry all kinds of dealers' specialties such as dry mix mortars in bags, metal lath and a full line of steel specialties, vats, and fire brick, and the specialties in the line of refractories and everything that the builder needs in all of the details and requirements of modern construction work.

The convention for the most part is made up of men who fully realize the importance of keeping cost systems that fully cover the ease, and many of them are past graduates of the accounting department of their own business connections. In fact this amounted to an address by an expert accountant to an attendance composed of experienced experts all familiar with the same line and naturally it became educative and the controversy in which the educative feature developed was invaluable alike to those who participated and those who gave their attention to the discussion.

The system explained by the speaker was found to be very comprehensive, exact and reliable, although several members described from the floor variations from the proposed system which they

have found in practice to fit the case of their own requirements.

Gordon Willis, of St. Louis, brought out the important point that in some cases invoices were sometimes made when the goods are never shipped or received as a result of the order. His method was explained by the introduction of a distribution book where record was kept of all the actual material received and a daily stock sheet, and that showed the exact amount of each and every item that was held in stock so that the order department could never make a blunder by any possibility in ordering goods which were already in sufficient supply.

Mr. Jordan explained that for the sake of brevity he left out of his paper two forms that he felt were immaterial to the text, as every dealer used something of the kind, and felt that almost anything that was practical would apply. In his system duplicate of the original order is signed by the receiving clerk and attached to the invoices before such completed record of the transaction held can be passed up to the treasurer. In this way, unless the duplicate arrives, the invoice can never be advanced for payment.

Richard Kind, of the Toledo Builders' Supply Co., remarked that he had observed no prevention for one of the daily troubles which confront the delivery department of the builders' supply business; namely, it frequently happens that the team arrives on the job when there is no representative



AL. H. GALLAGHER HAVING A SMOKE AFTER HAVING BEEN WATERPROOFED WITH "MAUMER."

of the contractor present to sign the dray ticket. In such case the wagon is necessarily unloaded and the driver forced to go away without the signature as evidence of the delivery. Identical transactions are occurring day by day so that frequently the unsigned ticket looks and seems to be a duplicate. Even when the contractor is perfectly honest, this may often occur.

Mr. Jordan answered that the only available system that he knew of was to send the unsigned ticket back with the next load and get the contractor's signature for both loads while the matter was still fresh in mind; this seems to be the general practice. Gordon Willis stated in a case of this kind the Hunkins Willis Lime & Cement Co., of St. Louis, used the following system: As soon as the driver returned with the unsigned ticket it was immediately followed up and sent to the contractor's office or residence to get his signature. If the ticket was not returned signed on the following day, a postal-card of notification was sent stating a load was delivered and no one found on the job to sign the ticket. This is followed up further by having one of the city salesmen make a special point of taking the unsigned ticket to the contractor and making it his business to get the signature upon it. Admitting that this made some clerical work and required attention, Mr. Willis felt that it had been the means of saving his firm the loss of a load of material or the disputing of a bill on many occasions where the transaction would look unsatisfactory and bring up disagreeable disputes.

Mr. Jordan proved himself to be the master of

the subject of accounting in the builders' supply line.

[In Rock Products for August, 1910, there was published a very comprehensive and fully illustrated article written by Mr. Jordan on the subject of keeping costs. It was very nearly parallel to the detailed text of the present paper. At that time it commanded much attention on the part of the dealers. Lack of space at the present time prevents us from presenting full text of Mr. Jordan's paper here.]

James C. Adams, chairman of the special committee on finances and promotion, stated that Richard Kind had acted as secretary and would present the report. Mr. Kind arose and presented the report, which unanimously commended every act of the executive committee, finding that the extra expenses of the past year or two upon examination had been necessary and unavoidable. As the service of Secretary Wardrop would continue to be indispensable at this time, recommendation was made that the deficit be immediately subscribed by the membership of the association and provision made for dues in sufficient amount to support the present salary appropriation for the office of secretary. The report recommended that the association be incorporated and properly chartered under the statutes of one of the states most advantageously selected at the discretion of the officers and the executive committee in charge of the affairs of the association for the coming year.

On motion of W. W. Fisher, it was decided to immediately proceed to signing the subscription of \$30 per member to cover the deficit. President Warner, accordingly, notified the members to file in procession beside the desk and sign. After this was done it was found that owing to there being a number of absentees the amount was not made up, and the matter was left open for the afternoon, so that the promoters of the fund could get in their work and secure sufficient signatures from those not present for the moment, but who are in attendance on the meeting. This was completed later in the afternoon, and it would have been easy to have exceeded the required amount.

V. H. Kriegshaber called up the recommendation of the report in reference to securing a charter of incorporation for the association.

Walter C. Schultz inquired the object of incorporation. Richard Kind explained that the object was to place the association on such a business footing that its bills would be legally collectable and not have it possible to accumulate a large amount of bills receivable.

Mr. Kriegshaber mentioned that by incorporation the responsibility of individual members ceased to a great extent, so that one member would not be legally responsible for the entire indebtedness of the association in case there ever should be any such. The matter of incorporation was referred to the officers and executive committee to proceed on their discretion. President Warner announced that time had now come for election of officers for the ensuing year and explained that the chairman of the two nominating committees had presented their slates, and requested the secretary to read the reports of the dual committee, which were as follows:

Ticket No. 1.

Charles Warner, president.
Harry W. Classen, treasurer.
Executive Committee—J. W. Landrum, Walter C. Jahneke, Richard Kind, J. Calvert.

Ticket No. 2.

Charles Warner, president.
Harry W. Classen, treasurer.
Executive Committee—Richard Kind, R. C. Brown, Walter C. Jahneke, J. G. Lincoln.

Both Mr. Calvert and Mr. Landrum objected to being elected and desired to withdraw, but it was decided that it would be necessary to take the tally as the ticket stood, the result being that ticket No. 2 was elected in accordance with the wishes of the gentlemen.

On the motion of B. F. Marsh, Worcester, Mass., H. H. Plummer, of Kenosha, Wis., was nominated vice-president to take the place, respectively, of Jas. G. Lincoln, of Boston, and R. C. Brown, of Oshkosh, who were on the list of vice-presidents.

The following nominations for vice-presidents of the various states were then read by W. W. Fisher, chairman of the nominative committee:

D. T. Hargraves, D. T. Hargraves & Co., Helena, Ark.

C. K. Waterhouse, Waterhouse & Price Co., San Francisco, Cal.

Frank H. Johnston, City Coal & Wood Co., New Britain, Conn.

Charles C. Bye, Charles Warner Co., Wilmington, Del.

S. Dana Lincoln, National Mortar Co., Washington, D. C.

F. G. Hanahan, Carolina Portland Cement Co., Atlanta, Ga.

Francis C. Sanders, Boise, Idaho.

H. H. Halliday, Cairo, Ill.

Fred Goeppert, Indianapolis, Ind.

Owen Tyler, Louisville, Ky.

J. J. Voelkel, Jr., J. J. Clark Co., New Orleans, La.

J. J. Kelly, Jr., National Building Supply Co., Baltimore, Md.

B. F. Marsh, Worcester, Mass.

C. W. Ray, C. H. Little Co., Detroit, Mich.

John Wharry, Northwestern Lime Co., St. Paul, Minn.

Howard McCutcheon, C. A. Brockett Cement Co., Kansas City, Mo.

Walter C. Schulz, Chas. S. Schulz & Son, Hoboken, N. J.

Henry Shafer, M. A. Reeb, Buffalo, N. Y.

George Gengnagle, Schaefer & Gengnagle, Dayton, Ohio.

James N. Thayer, O. C. Thayer & Son, Erie, Pa.

Chas. M. Kelly, Jas. C. Goff Co., Providence, R. I.

A. G. Gower, Gower Supply Co., Greenville, S. C.

H. T. Harrison, Nashville, Tenn.

L. W. Macatee, W. L. Macatee & Sons, Houston, Texas.

F. P. Jones, Wheeling, W. Va.

S. W. R. Dally, Seattle, Wash.

H. H. Plummer, Kenosha, Wis.

J. H. Allen, Nebraska Material Co., Lincoln, Neb.

The holdover members of the executive committee who still serve are: Frank S. Wright, Meacham & Wright, Chicago, Ill.; Harry A. Moore, De Frain Sand Co., Philadelphia, Pa.; Ambrose Tompkins, Newark, N. J.; Edward S. Walton, Youngstown Ice Co., Youngstown, Ohio.

WEDNESDAY AFTERNOON, FEBRUARY 22.

The afternoon session was called to order by the president, Charles Warner, at 3 p. m. The first thing on the program was a paper by A. T. Boyd, of Baltimore, Md., which was as follows:

"The Bad Practice of Extending Credits and Terms Beyond the Reasonable Limits Recognized as Standard Practice—Where It Leads To—The Remedy."

By Harry P. Boyd, president of the Credit Men's Association of Baltimore, secretary of the National Building Supply Co., Baltimore, Md.

It is not without a sense of trepidation that I venture upon a discussion of a subject of such vast importance to the trade and one so far reaching in effect.

We all know that in modern merchandizing credit is the vitalizing force which keeps the industrial world on the move. Henry Clews has declared, "It isn't cash, but credit, that makes for confidence and growth in the business world." So seriously is this axiom taken that in nearly every branch of business associations of credit men have been formed, and it is the function of these credit men to fix a status of character or commercial repute for the customer or patron, and to decree the applicant for credit either worthy of trust or unfit for business dealings.

In reviewing the various branches of barter and trade, I have reached the conclusion that in all the wide field of commercialism there is presented no precise parallel to the conditions under which the builders' supply trade is conducted. In nearly every other line there is a basic principle under which credit is given or refused. There are tangible assets scheduled; the applicant's character, his capability as a business man, his general reputation and local trade conditions are ascertained and become factors in determining the estimate the credit man forms as to whether he is a good moral risk, worthy of trust and confidence.

In our line of business these qualifications and characteristics are, it would seem, but of secondary importance. As the supply trade is at this time largely constituted, credit is mostly a gamble. There is lacking that element of tangible security which is regarded as an essential to the granting of credit in other lines.

A contractor comes to the dealer or the dealer goes to the contractors, as a preliminary to a trade transaction. Bids are submitted, accepted, and the deal is closed. If the question of resource is broached at all, it is promptly brushed aside by the bluff of the contractor, who disposes of his inquirer by a string of generalities. If there are assets, they are as a rule vastly inadequate to the amount of credit involved, measured by the standard demanded by other lines of trade and which have a direct bearing upon the amount of credit to be extended. Your contractor may be a gilt-edge risk, or he may be one whose known reputation for integrity and honor places him in the desirable class; on the other hand, he may be a man of known honest intent and with no resources other than his willingness to meet his obligations should the undertaking in which he is about to engage be carried to a successful completion. You chance it. In any case the element of risk is nearly always present and must be borne by the supply dealer if he would remain in the game. I am talking now of those contractors whose trade a majority of the dealers seek, leaving out of consideration that other class with whom "cash transactions are advised."

As you are doubtless aware, a contractor engaged upon work of any magnitude, in a majority of cases, collects eighty per cent on the work done monthly, as he goes along. He makes a similar arrangement with the material man; that is, to pay him monthly eighty per cent of the cost of the amount of material furnished within that given time. Your experience will very likely remind you that this eighty per cent payment is frequently held back an additional thirty days or longer and on a big contract the deferred twenty per cent payments reach a considerable sum before the job is completed and a final settlement made.

Now, in the experience of most supply dealers there is nothing like a net twenty per cent profit in the transaction as a whole. Yet not only is the dealer's profit tied up by this arrangement, but a considerable amount of his capital. In other words, he becomes a party to the financing of the work, the banker to the contractor, without the banker's customary compensation of interest and discounts.

The contract is not framed or phrased by the supply man, who by commercial usage should be regarded as the party of the first part, but is furnished and dictated by the contractor the party of the second part, and if anyone is not familiar with its terms and provisions I have a copy of the instrument for your inspection.

Now this, of course, sets forth the conditions as they are, when the dealing is with the big contractors, men who are classed as A. 1, in whom the element of risk is at the minimum, but I have related them to illustrate the inequitable system largely in force between the dealer and the contractor, whose standing in the building world practically enables him to dictate terms in the absence of any rule among the dealers to the contrary.

Here the question of "One bad practice of extending credits and terms beyond what is regarded as standard practice" does not apply, except for some tentative drastic action to correct what in the abstract appears an inconsistent hardship on the dealer. However, you are reasonably sure of eventually getting your money, although you have been subjected to a disadvantage in the deal and have been compelled to assume a financial obligation which rightfully should have been borne by the contractor.

It is when dealing in smaller transactions and with contractors or customers of less responsibility that we are confronted by the problem of extending credits beyond reasonable limits, yet what rule is there to indicate where credit shall begin and where cease?

As I intimated in the beginning of my remarks, there is little or no tangible asset presented to serve as a basis on which to extend credit. In treating with this class of patrons, the dealer needs to possess a keen insight into human character. You must study your man—take his mental and moral measure—judge for yourself whether he is a risk worthy of your confidence. In the sharp competition for trade a dealer will often take chances which a more conservative business judgment would condemn. Having once opened the golden now of credit, he will often hesitate to cut off the supply, even when slow or deferred payments should admonish him he has passed the limit of safety. This weakness puts a premium on doing business with contractors who are not strong enough to justify it and imposes a handicap on those dealers who are endeavoring to do business on safe lines.

The result is diminished legitimate profits, and in too many instances the wrecking of business concerns which have been drawn into the vortex of ill advised credit extension.

In the final analysis of the proposition, the answer seems to be a co-operative credit system. Without it there is no possibility that the present defects in the methods of conducting the builders' supply trade can be eradicated and a more businesslike policy effected. The supply man, from the smallest to the largest, must learn and practice the methods which prevail in other lines of business. Here should and must be a credit association formed, allied, or a part of this organization, national in its scope, which will place every material man in a position to know something definite about the financial standing of the man with whom he is dealing—to become acquainted with his resources, his past record, his future prospects, his integrity, and his putative ability to meet his obligations. In almost every other line of business this method prevails. It has been adopted, I am gratified to learn, in the supply trade in isolated instances in different localities with more or less satisfactory results, but in a majority of cases the decision of giving or of withholding credit rests upon individual judgment and that formed after an investigation, necessarily more or less superficial, because of the lack of concrete and cumulative facts.

Without an organized credit bureau, the practice of extending credit must be largely a matter of guesswork. There must be co-operation, and co-operation of the honest kind. To illustrate what I mean by co-operation of the honest kind, I will mention an incident. One supply man some time ago interviewed a competitor who had applied to the first for a line of credit. "Well," said the dealer questioned, "I've sold him considerable material and he has paid me all right, except for a small balance. I guess you're safe in giving him what he wants."

On the strength of this recommendation the credit was given. It turned out the "small balance" amounted to about \$1,000, which was subsequently collected, and the dealer who furnished the material after the other fellow had shut off credit became the goat. The dealer who gave this information was in a way truthful, but he was not wholly honest. The report did not disclose actual conditions it was, in fact, purposely misleading with a view of shifting the credit from his shoulders to another's.

A properly organized credit bureau would obviate the object of any such ex-parte statements and would supply the inquirer with the facts, warranted by the true financial standing.

So much for the review of conditions.

When we come to attempt to definitely determine "What is a reasonable time limit on discount?" or "What is a reasonable time limit for payment of face of bill?" we reach the hazardous passage of conjecture. On the question of discount, if we follow the practice in vogue among manufacturers, the limit of time when discount should be allowed is ten days, or at the outside fifteen days on all bills purchased during the preceding month. The time limit for payment of face of bill should not extend beyond thirty days subsequent to the month in which it was contracted. An important consideration enters here. If the dealer is carrying any bank accommodations, and there are few dealers who are obliged to give extension credits but must resort to this source for capital to keep the business running smoothly, these accommodations are interest bearing—a drain which, if permitted to assume any great proportion, sucks out the meat of the profit. Practically, you are paying interest on the overdue charge accounts you have on your books unless you exact from the debtor an interest charge equal to that you pay the bank.

Now, we all know that a rule of this kind is not generally adhered to. There are circumstances which in a greater or less degree control the conditions of credit in some instances. The question is, "Can a hard and fast credit rule be made effective in the supply trade? Is it feasible? Practical? Can or would it be lived up to?" I for one believe it not only possible but essential to the stability of business. To make such a rule effective

would require a pledge from every man in the trade to adhere strictly to the provisions of the agreement. It is for you, gentlemen, to decide the question.

One other point I wish to bring to your attention in connection with a safe and sane method of trading is a study of the cost of doing business as a credit factor. The age of estimates and guessing is a thing of the past. This is an age when competition forces to the front the neglected truth that all cost must be provided for before there can be a profit. The dealer who fails to take into consideration every detail of cost will eventually find himself up against a losing game. Without this consideration, competition becomes ruinous and demoralizing, ruinous to the dealer who fails to apply the rule and demoralizing to the trade based on safe lines.

In conclusion, I would suggest a fair field and a square deal to all.

The possession of a knowledge of the cost of doing business before computing profits.

To remember that competition is competition only when it shows a profit to the seller.

Don't hamper business by withholding credit. Give a customer all the credit he is entitled to, but first find out the amount.

A more equitable arrangement with contractors, which will not compel the dealer to shoulder more than his share of responsibility in financing a contract.

The creation of a co-operative credit system which will enable the dealer to obtain the fundamental facts concerning a customer, so that he may reach a correct opinion as to how far it is safe to extend credit.

Finally, that loyalty and honor actuate every member of this association in the conduct of business that competition may be honest and every man come into his own.

Following this paper Mr. Warner read a message from F. S. Wright, who is in California for his health, expressing his sincere regret in not being able to be with them.

Announcement was made that the executive committee would convene at 5:30; also that they would hold another conference at 9 a. m. Thursday morning, and the representatives of the state organizations, that were present, were invited to join in the 5:30 meeting.

Mr. Britnett was called on for an expression from the Canadian side. He said: "While we come from across the line, and I am sorry to have to say there is a line, we, from Toronto, extend the heartiest and fullest greeting to this association, because we believe in organization. For many years, we went along hit and miss and finally twelve of us got our heads together and talked matters over and talked to the cement people, after which we came to a compromise, and it has been of mutual benefit to both of us. Now, we meet once a week and talk matters over, just as though we were one family."

QUESTION BOX.

Prior to the opening of the first question, the president urged that the discussion be free and open in order that the executive committee might have the views of the members before them in their efforts to determine the best policy for the association during the year 1911.

Question 1 brought up further discussion along the line of Mr. Britnett's remarks as to the dealer having a certain differential up to 500-barrel sales and letting the cement company handle the business beyond that. Following this up, another member declared that it was necessary for the dealers to protect the manufacturers also, because, "If you had a contract with your manufacturer and another dealer is willing to sacrifice his profit in order to get the business, you could not expect your manufacturer to lay idle and let the business go to some other concern."

Richard Kind, of Toledo, Ohio, took a very positive stand on this question, and stated that the only thing to do was for the builders' supply men to be a unit and strong enough to be felt and heard to the extent that the cement people would be compelled to quit selling the contractor except through the dealer for the legitimate dealer's profit. He said this was the only medicine that would do any good. He also said:

"I am three score and expect to live a few more. In the history of the last thirteen years, cement has not been all of our troubles, because when the stucco, plaster, brick and sewer pipe man comes around, he says the only thing you talk about is cement, and I will admit that the cement manufacturers lack an ungodly amount of common sense, otherwise the relation of the cement manufacturer and the dealer could not help but be pleasant. I feel sorry for the cement manufacturer. He is not getting what he should for his product, nor is the dealer, probably, any better. There are two mills closed up in Michigan now, another one about to close and one in Ohio about to close, for the simple reason that the price has been dropped down to a point where they cannot manufacture except at a loss. The reason for this is that the manufacturer is not working hand and hand with the dealer, and this condition will prevail until they do so. If you are going to permit the manufacturers to take the big contracts, make him go into the business,

The Twentieth Century Lime Plaster

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All the good qualities of old-fashioned lime mortars, coupled with the quick hardening qualities of patent plasters.

Subjected to the most rigid laboratory and practical tests with excellent results.

Will not be damaged by water; will not destroy the color of paper or other decoration.

Preserves metal lath or iron work.

You can bank on its plasticity and covering capacity.

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and every other western city stands today upon foundations made of concrete, or rubble stone masonry laid in cement. All the street paving and sewers, together with ninety per cent, of the brick work are laid in cement. It is all one kind of cement at that

UTICA HYDRAULIC CEMENT

The Best and the Cheapest

As a brick laying mortar this is the simplest and the safest material to use. All that is necessary is to mix in the sand and the water, without any mechanical skill or previous instructions and the resultant mortar is the strongest, the most durable and the easiest to work that can be found. In fact it is perfection itself, and made in exactly the same way of the same raw materials that won its reputation more than seventy years ago.

Think of it, A perfectly reliable cement with an uninterrupted successful record of three-quarters of a century. It is sold cheaper than any other cement because it is a natural product, and it never varies in quality.

Engineering work of the most difficult kind, such as laying masonry under water, is next to impossible with artificial cement while it is easy and cheap with Utica Cement.

No cement is good for every purpose. Those who make such pretenses are unworthy of the attention of intelligent builders, and especially of learned architects and wide awake engineers.

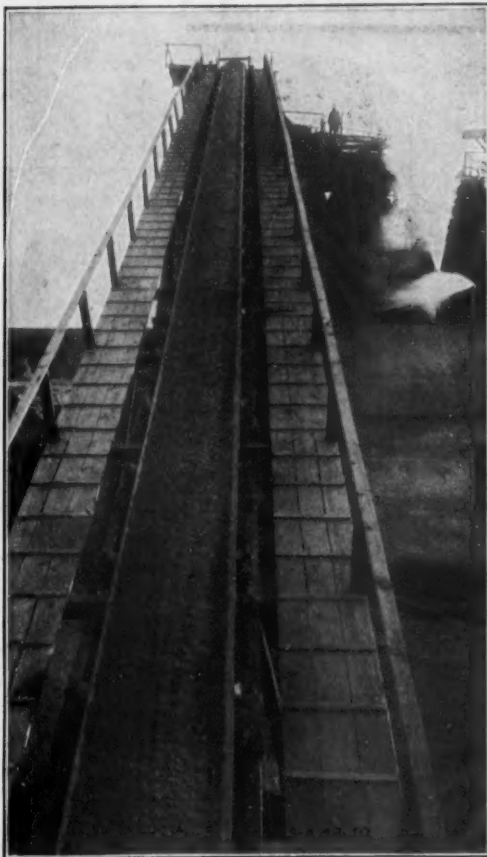
We affirm without the slightest danger of competent contradiction that Utica Hydraulic Cement is far superior to all other cements for those purposes for which it is particularly adapted, namely as a masonry mortar material and for general hydraulic work.

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Every Bag and Every Barrel Guaranteed

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TILE MEN MEET

Hold Three Days' Session at Manufacturers' Exhibit Building, Chicago—Most Successful Convention Ever Held—Plans Discussed.

With the largest attendance and the greatest enthusiasm ever witnessed at a meeting of the tile men, the sixth annual convention of the Interstate Cement Tile Manufacturers Association opened yesterday morning at 1319 Michigan boulevard, just across the corner from the New Southern Hotel, the delegates' headquarters.

The members were bubbling over with good words and wishes and at the open discussions were all on their feet at once, trying to tell each other of their "system" in making cement tile.

President P. H. Atwood, Armstrong, Iowa, opened the meeting at 9 o'clock with a learned address, which was very well received. After the president's address came two papers on "Number of Tile Men Per Day," rack system, George Sokol, Sibley, Iowa; car system, Charles E. Sims, Worthington, Minn. A. H. Denniston, Fergus Falls, Minn., then gave an interesting talk on "Things That Are Not So." D. G. Keith followed with one of the best papers given at the meeting, "What We Want in a Mixer." An informal discussion on "What We Have to Offer" was indulged in by all the mixer men. They all seemed to be talking at once, but nevertheless there was a lot of good points gathered from their talks. The ways in which they worked things at their own plants were all put forth and the best methods brought out and dwelt at length on.

After this discussion George P. Deikman, Mason City, Ia., gave the feature talk of the first day's meeting on "Grading of Sands." He had gone to the trouble and expense of preparing charts showing the tensile strength and absorption tests of different grades of sand. He brought out screens and scales and fully explained to those present the manner in which sand should be tested to determine its quality, and showing how much fine or coarse sand could be added to make the material a standard grade. We will print copies of the charts showing these tests in our monthly edition.

After Mr. Deikman's interesting and instructive talk came the regular business of the meeting, and after that a motion for adjournment to meet at 9 o'clock Wednesday was carried.

The Car System in Cement Drain Tile Manufacture.

(By Charles E. Sims.)

The car system of handling cement tile in the factory admits of the highest possible rate of production with the least labor. It is expensive to install but gives a plant so equipped every advantage.

The car system can be installed for about as follows: 100 cars, 36 or 40 inches wide by 8 feet long, with angle iron corner posts and two decks.

@ \$20.00.....	\$2,000.00
Freight and drayage on cars, 100 mi. @ 60cts cwt.....	330.00
Labor assembling cars, shipped knocked down..	40.00
Two transfer cars @ \$25.00.....	50.00
Freight and drayage.....	7.48
1,114 feet of track indoors, 12-lb. rails, for rails, splices and bolts, @ 18cts. per ft. of track	200.52

Freight and drayage.....	20.00
640 ties, 4"x3"-0" @ 7cts.....	44.80
Labor laying and grading @ \$2.00 per 100 ft. track.....	22.20
One switch, installed.....	40.00
600 feet of track in yard @ 18cts. per ft.....	108.00
300 ties, 4"x3"-6" @ 7cts.....	21.00
Labor laying and grading @ \$2.00 per 100 ft.....	12.00
Freight and drayage.....	14.00
Superintendence.....	20.00

Total.....\$2,950.00

Allowing 8 per cent per annum for maintenance and 6 per cent for interest on the investment we have an annual charge of \$413.00 against the car system. If we are to compare it with the rack system this charge shows to the disadvantage of the car system. Although the car system requires a larger building, this fact does not operate to further disadvantage because the expense thus involved is offset almost exactly by the cost of the planks, partitions, etc., for the rack method.

Labor—Considering the labor from the time the tile are formed until they are piled in the yard the car system requires the following number of men:

4"x5" or 6"—two strippers, one man to push the filled cars into the curing room and bring up empties, two men to unload cars in the yard; total, 5 men.

7" and 8" Tile—Above mentioned five men and one additional to assist with cars and to relieve strippers, six men.

10" and 12" Tile—Above mentioned six men and one additional in yard; total, 7 men.

Rate of Production—A ten-hour run under these conditions should not be attempted on sizes larger than 6", for the number of cars here considered is not sufficient unless a small size is run one-half the day and a large size the other half. And, in fact, it would be impracticable to require any crew of men to work on the sizes above 6 inch, possibly I might say 8 inch, for more than five hours, if the highest rate of production is to be obtained. Under these conditions the following runs have been attained as an average for a season:

	Per Man.
4,000—4" in 10 hours.....	920
4,500—5" in 10 hours.....	900
4,300—6" in 10 hours.....	880
4,000—7" in 10 hours.....	666
3,700—8" in 10 hours.....	616
1,700—10" in 5 hours.....	243
1,400—12" in 5 hours.....	200

The car system offers a means of accurately counting the tile produced. The man who pushes in the cars counts the number of tile on each car and enters it on a card provided him. The count is taken when the car is on the transfer just before it is pushed into the curing room. The record is easily kept if a card 3 1/4"x7" is ruled off lengthwise into four columns. Head the first column "Number of Tile," the second column "Track Number," the third column "Number of Tile," and the fourth column "Track Number." After counting the tile enter the number on the car in column one, and the track number on which it is run into the curing room in column two. Each car can thus be kept on record. At the end of the day the total number of tile manufactured can be footed up exactly and recorded on the office books.

Another advantage of the car system is that the broken tile can be taken off by the man who runs in the cars and the material while fresh returned to the machine.

By recording the position of each car in the curing room it is possible for instructions to be written out each night allowing to the yard man just what cars are to be unloaded the next day. With this system there is no danger of running out the tile too green.

Aside from the advantages named we have another of a different type, but one worthy of your attention. It is impossible for a crew of men to work with as good spirit and to accomplish as much in the low ceiling, poorly lighted and poorly ventilated curing rooms, where the rack system is in use, as the same men can do with the car system. In this case the machine is located where the light and ventilation are the best in an open, uncrowded space, and all the heavy work is done there. There is no tiresome walking, no confusion, and all the work is within the superintendent's sight at once. Certainly the greatest efficiency can be attained under such conditions.

The tile once on the car remains untouched until the car is run out into the yard and there it is unloaded. The rack system requires an extra handling of the tile, for it is necessary to take them off the racks and load them onto trucks to be wheeled out to the yard pile.

Not only does the car system save this extra handling but it saves the breakage which goes with it.

WEDNESDAY'S SESSION.

Anyone in attendance Tuesday at the convention of the tile men would probably have said that the meeting was perfect, but the members did better on the second day's session. There were many more present, those coming in late being detained by various causes, including snow storms, and less formality was observed, everyone being given a chance to express his pet ideas.

The Honorable President, P. H. Atwood, opened Wednesday's meeting at 9:30 in the morning with a short address of welcome given for the especial benefit of those who were not present at the first meeting.

Then the general discussion that had been postponed from Tuesday's session was taken up, and the subject, "Methods of Sand Washing," was fully expounded by those present. Many of the gentlemen told of the methods employed at their own plants and also the success that attended these methods. A number of those present used the same method of washing their sand, but several good points were picked up which gave a line on how things should be run at the mill.

President Atwood then appointed the following committee on nominations: W. G. Middleton, Elmer A. Hine and J. C. Whetstone. This committee is to nominate officers and the election will be held on Thursday.

Prof. A. Marston, of Ames, Iowa, being unable to appear, his paper was read by A. O. Anderson of the same town. Mr. Anderson deserves much credit for the way he delivered the address. The subject was, "Proposed Standard Methods of Testing Tile."

We printed Prof. Marston's paper in our January issue.

The feature of the session was then given by C. M. Powell, assistant inspecting engineer for the Universal Portland Cement Company, Chicago. This was well received and the lantern slides illustrating his various points were well liked.

PROPOSED STANDARD METHODS OF TESTING DRAIN TILE.

(By C. M. Powell, Assistant Inspecting Engineer Universal Portland Cement Co.)

The subject, "Proposed Standard Methods of Testing Drain Tile," takes for granted two things: First, that drain tile should be tested; second, there should be but one general accepted method of making such tests. It can hardly be assumed that everyone recognizes the importance of the former or realizes what the latter would mean to the cement drain tile industry. All kinds of steel, cast iron, wrought iron, cement, lumber, paving brick and all structural materials are purchased on specifications. The interest shown at present on the subject of tests for drain tile indicates that in the course of a short time this product can also be included in the above list.

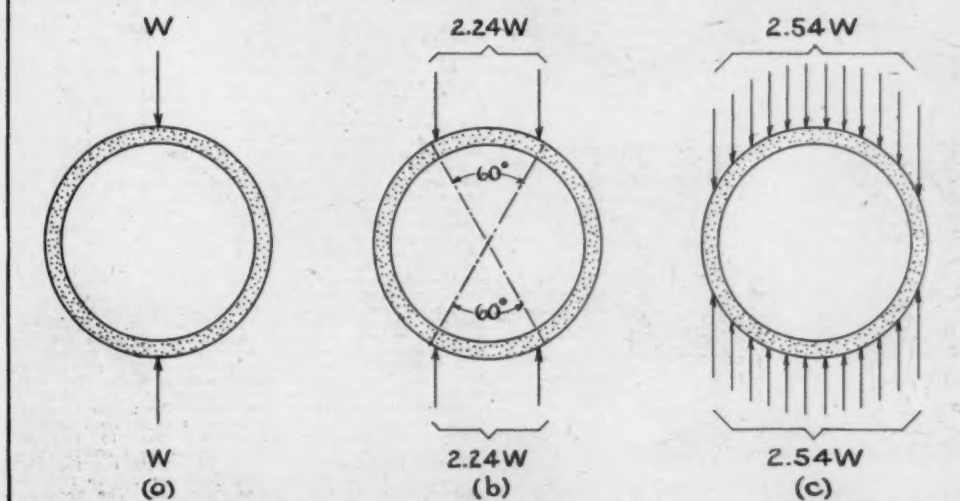
According to the best available information there were made last year in this country some 124,000,000 cement tile, 12-inch and less in size, valued at approximately \$4,000,000. Certainly the expenditure of this sum annually justifies the user in insisting upon some guarantee of a satisfactory quality.

The general practice of purchasing cement drain tile on a specification would benefit the manufacturer who turns out a first-class product and free him from the unjust reflection which the inferior product of the unscrupulous or unqualified manufacturer throws upon his business. It would relieve the drainage engineer of a lot of responsibility, because the quality of the tile would not be left to his judgment, but would be a matter of satisfying certain definite requirements. A set standard of quality for cement drain tile would reduce the failures to a minimum and leave nothing upon which the other tile interests could base their claim that cement tile is not adapted for drainage purposes.

It was the writer's privilege recently to attend the twenty-fifth annual meeting of the Illinois Society of Engineers and Surveyors. This society has probably done more on drainage in its twenty-five years' existence than any other society in the country. Cement tile was a live topic at this meeting. One drainage engineer present, who had at that time twenty-nine drainage districts under his direct supervision, expressed the consensus of opinion when he said he was not using cement tile in any of his work because he could not be assured that the tile had been well made with sufficient cement, suitable aggregate and properly cured. Until the engineers have this assurance cement tile will not receive their entire confidence or enjoy the reputation to which the merits of a good quality entitle the product. This assurance can be guaranteed not only to the engineer, but to everyone concerned, if you, as manufacturers, sell your product on a specification. When this is done the drainage engineers will be boosted, the claims of other tile interests will be discredited, all will recognize the merits of cement drain tile, your product will continue to be used and its further introduction made possible.

A specification for drain tile which will bring about these things must necessarily be one which represents a harmonization of the views of manufacturers, engineers, societies, engineering colleges and experiment stations regarding what requirements will give the desired quality of product. This is the means whereby the non-essentials will be rejected and only the fundamentals retained. Such a specification can be prepared only after the most painstaking investigation, thorough study and serious consideration. All this work will be justified by the result, which could be accepted by all concerned as meeting

COMPARISON OF CONDITIONS OF LOADING



every possible contingency, a true standard in every sense of the word and the best that could be drawn up. The process of manufacture and the conditions in most, if not in all, factories are such that tile cannot be manufactured to comply with more than one specification except at an increased cost of production. On the other hand, making all tile according to requirements, worked out as suggested, would make for a standardization with a tendency to reduce the cost or increase the output, which amounts to the same thing.

The American Society for Testing Materials, as you know, has prepared specifications for structural materials in general that are the accepted standards throughout the country. Last summer Mr. C. W. Boynton, inspection engineer, Universal Portland Cement Co., brought to the attention of this society the need of standard tests and specifications for drain tile, and their executive committee has recently authorized the creation of a special committee to study thoroughly the drain tile question and report standard tests and specifications at its earliest convenience. This committee is now being appointed and as soon as completed the matter will receive its immediate attention. As is the practice of the American Society for Testing Materials, the co-operation of other societies and associations will be sought. The Illinois Society of Engineers and Surveyors at its last meeting in East St. Louis, January 25-27, 1911, authorized the appointment of a committee on standard tests and specifications for drain tile to co-operate with the committee of the American Society. In due time no doubt the committee appointed by the American Society will invite the co-operation of the Interstate Cement Tile Manufacturers' Association in this matter. What the American Society for Testing Materials recommend in this matter will have great weight, and a uniform specification will result by the adoption of these recommendations by all other societies. If each local society and college or experiment station makes tests and issues recommendations regarding proper requirements for drain tile, there would be no uniformity and this would lead to endless confusion and disputes between manufacturers, engineers and purchasers. For instance, if such specifications are adopted in Iowa the drain tile you furnish for use in that state would have to meet these requirements, while those which you furnish for use in Minnesota would probably have to meet some other requirements.

Considering what a standard specification for drain tile should embody, the first attention must necessarily be given to a specification governing the tests of tile. Since this material is used under conditions which subject it to external earth pressure that sometimes causes failure, a breaking test by the application of an external load suggests itself. The pressure may be applied in a variety of ways. The load which a tile or pipe will stand without breaking depends upon the conditions of loading. (Slide.) The comparison of the stresses produced by the assumed loadings illustrated in this slide shows that under the concentrated loading, Fig. (a), the pipe will sustain the smallest load. Under the loading in Fig. (b) a load two and one-quarter times as great as if it were concentrated at one point top and bottom will be required to cause failure. If the load is uniformly distributed across the horizontal projection, as shown in Fig. (c), over two and one-half times the concentrated load will be required to break the pipe. It is therefore evident that tests of tile to be comparable must necessarily be made under the same conditions of loading, and this is why first attention must be given to the methods of making the tests.

Before taking up which method is best adapted for the purpose, let us look into the conditions of loading which may be found in practice. The amount of the load and its distribution, and therefore the stress in the tile, depends upon a number of conditions; the nature of the earth used in the filling, the method of bedding the pipe, the way of tamping the earth at the sides, the amount of lateral restraint or pressure of the earth horizontally, the method of filling and packing the earth above, the conditions of moisture in the earth, etc., all have an effect upon the amount of external pressure on the tile. Professor Talbot, in University of Illinois Engineering

METHOD OF TESTING PIPE AND TILE WITH THE



UNIVERSAL TILE TESTING MACHINE

Experiment Station Bulletin No. 22, calls attention to the following ditch conditions: (Slide) If the layer of earth immediately under the pipe is hard or uneven, or if the bedding of the pipe at either side with soft material is not well tamped, as indicated in Fig. (a), the main bearing of the pipe may be along an element at the bottom and the result is in effect concentrated loading; hence, as shown by the last slide, the tendency of the pipe to fail is greatly increased. In bedding the pipe in hard ground it is much better to form a trench so that the pipe will surely be free along the bottom element even after settlement occurs, and so that the bearing pressures may tend to concentrate at points, say, under the three points of the horizontal diameter (or even the outer $\frac{1}{4}$ points). This will reduce the tendency of the pipe to fail, as shown in Fig. (b) on the last slide.

In case the pipe is bedded in loose material the effect of the settlement will be to compress the earth immediately under the bottom of the pipe more completely than will be the effect at one side, as indicated in Fig. (b), with the result that the pressure will not be uniformly distributed horizontally. Similarly in a trench if loose material is left at the sides and the material at the extremities of the horizontal diameter is loose, and there is little restraint, as indicated in Fig. (c), the pressure on the earth will not be distributed horizontally and the amount of stress in the pipe will be materially different from that where careful bedding and tamping give an even distribution of bearing pressure over the bottom of the tile. In case of a small tile in a deep trench the load upon it will be materially less than the weight of the earth above, as shown in Fig. (d), where the earth forms a hard, compact mass and is held by pressure and friction against the sides of the trench. If the large tile is held in a trench with sloping sides, as shown in Fig. (d), the load which comes upon the pipe will be materially less than the earth immediately above it. Should the sides of a deep trench cave, the pressure against the pipe will differ occasionally from that which obtains in the case of an earth filling as shown in Fig. (c). Your own experience will probably suggest other conditions of loading which might occur in the ditch. The ones described are sufficient, I think, to indicate that

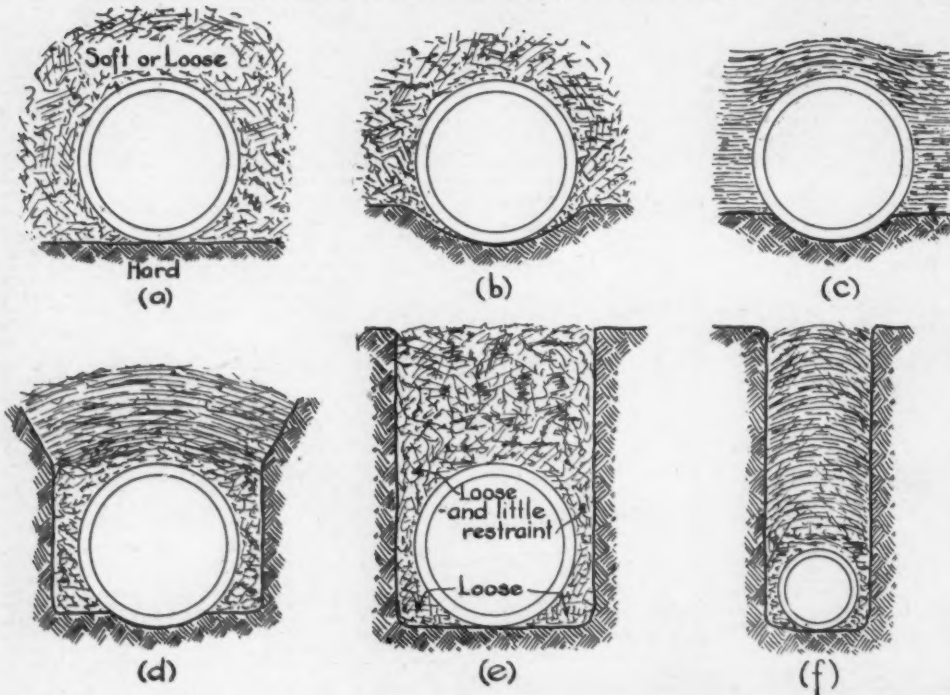
a wide variation exists in the amount of pressure which will come upon a tile in actual practice. It is not practical to attempt to select any one of these conditions as being representative. If one were to be on the safe side a condition which produces in effect that of a concentrated loading must necessarily be selected. However, from experience in the field, at the tile plants and in the laboratory, we have found that the conditions of loading found in the ditch are not as important to consider in selecting a method of loading for making the tests as are the conditions under which the tests must be made. The latter govern the selection of the method best adapted for these tests. For instance, take the standard strength test for cement: This test is made in tension, not because it approximates in the least degree the conditions under which the material is used, but because it is a simple test and one which gives the engineer and cement manufacturer a fair knowledge of the material and guides him in the use of it.

Let us consider for a moment the purpose of the breaking test, where it will be made and by whom it will be made, in order that we may get a clear idea of the requirements of a practical tile testing machine that can come into general use. The purpose of the tests is to determine under what load a tile will break and in this way to furnish a basis for comparing the quality of a tile from one plant with tile from another plant. The tests will be made at the plant where conditions are seldom favorable for doing such work scientifically, and out along the line of the ditch where the engineer will haul the testing outfit onto the job, set up and make a few tests and under the least favorable conditions. The operators will not as a rule be familiar with such work and cannot appreciate the necessity of numerous details, or may be careless and neglect them should such details of operation be required. These conditions demand of the testing machine, first, that it must be accurate to give comparable results; second, it must be capable of rapid operation to save the superintendent's time and the engineer's time, and therefore the user money; third, it must be simple and free from lack of a better expression, absolutely "foolproof." The operations required to make a test must be reduced to the fewest possible number. Can a machine be devised which will meet these essential requirements and duplicate ditch conditions?

At the start the various methods which had been used up to that time were considered. (Slide.) This slide and the two following ones illustrate a crude method of testing large pipe when a testing machine of sufficient capacity is not at hand. It is sometimes used on small tile, but the results are not of much value. (Slide.) Here is shown a method which has been used for a concentrated loading at the University of Illinois. (Slide.) This is the method used at Iowa State College, which was also considered. It cannot be said that it is representative to ditch conditions any more than (slide) this method of loading could be considered as such. This is the method we used and found satisfactory for making laboratory tests on tile. We tested over one thousand in this way and obtained reliable results. It is easier to operate than sand bedding. However, it is not considered practical for use outside the laboratory. Besides the time required to make the tests the amount of load necessary to break the specimen under this loading is too great. (Slide.) This is a view of the tile in the testing machine and (slide) here we see it broken. (Slide.) This is the Brooklyn method, where the tile rests on two supports at the bottom and the pressure is applied on one line along the center at the top. The lower supports are adjustable. This loading requires 1.065 times that of one point top and bottom. The commendable feature of this method is that the specimen centers itself and does not require any attention in this respect from the operator. Place the tile on the lower supports and apply the load; it is simple, absolutely accurate and quick. Aside from the adjustable distance between supports it is "foolproof." (Slide.) Here we have, in Fig. (a), a modification of the Brooklyn method which was tried out on the Universal tile testing machine. The trouble with this was that too large a capacity of platform scale was required. Note that the distance between the points at the top and bottom is adjustable to the size of the tile. In Fig. (b) is shown an improvement on the first system. After testing a tile on an 800-pound scale to something like 2,000 pounds we concluded we had a better chance of breaking the scale than the tile, and this method was discarded in short order for the one now used, shown in the next slide. (Slide.) This is the method of loading used at present in the Universal machine and one which we have found can be safely used on 1,000-pound capacity platform scale for tile up to 30". The distance between the lower supports is fixed at 2", and while the bending moment developed is not exactly the same for the different sizes there is practically no difference above the 6" size between it and the one point of support. The amount of load required for each size to sustain under this condition of loading will take care of the little variation in the stress developed in different sized tile by this loading. Analysis of this loading shows that theoretically there is but 5% difference on a 4" tile, 2 1/2% on the 6" size, less than one-third of one per cent on the 12-inch size and no difference on 24-inch tile. As in testing, the results will be reported in, say, pounds of load per foot of length for a given diameter and not as a breaking load of so many pounds per square inch of wall section; that is, modulus of rupture, the small difference in this load for the smaller sizes will not be at all objectionable. For the 12-inch size it is only three pounds in one thousand; for the larger sizes it is too small to figure. This loading is scientific because it can be accurately calculated and the results agree closely with the tests. It is also practical. What more could be required? Comparisons will not be made between a certain make of 4-inch tile and some other makes of, say, 12-inch tile. What is required is a method so accurate, simple and absolutely controllable in any operator's hands that the results of tests on, say, 8-inch tile made along the ditch by the engineer or his assistant are comparable with the results that you or one of your men will get at your plant on tile of the same size, other things, such as age, mixture, etc., being the same. If a tile testing machine is so constructed that the results obtained may be judged by the operator, intentionally or not, imagine the field for dispute which is immediately in store for the manufacturer and inspector who passes on the product.

A specification for tests of tile should not be such as to require any computations or calculation on the part of the man making the test, because it can be put in a form so that this is not necessary. Calculations are all right for research work, but the average tile manufacturer or drainage engineer will not stand for any unnecessary work in this respect and a good specification will not burden him with it. It should not be compulsory to figure the breaking load per square inch of wall section; that is section modulus. The breaking load can be such as will require a good quality of concrete and this will take care of the section modulus.

CONDITIONS OF BEDDING AND LOADING FOUND IN PRACTICE



There is one other important detail closely connected with a method of testing which must be considered and that is the application of the load to the specimen. This is one of the fundamental principles of testing which has been long recognized and always specified in making such tests as the one in question. As a case in point I quote from "Uniform Methods of Testing Portland Cement" regarding the strength test as follows:

"The load should not be applied too suddenly, as it may produce vibration, the shock from which often breaks the briquette before the ultimate strength is reached."

"The load should be applied at the rate of 600 pounds per minute."

In the design of this machine simplicity, speed, ease of operation and accuracy of results have been kept constantly in mind. The machine will cost as little to build as is consistent with these essentials. The machine itself is the best proof that we have realized the importance of these essential requirements better than others have. This is to be expected since we have used the machine for over a year in tile plants and on the line of the ditch in three different states, thereby becoming acquainted with just what is required.

We have without doubt made as many tests on drain tile in our investigation of this subject during the last few years as any one. I am glad to have this opportunity to present some of the things we have learned concerning the proper methods for testing tile and also to point out the merits of the machine we have designed to make these tests. The purpose in so doing is not to ask you as an association to adopt as your standard the methods we recommend as being the best which can be followed for making these tests, although you could not at this time adopt a better one. But with the best interest of the cement tile industry at heart we believe that at present nothing of this kind should be adopted. Furthermore, without a better understanding of this important subject than it is possible for you to get from the descriptions of the several proposed methods, as presented, you are not qualified to pass judgment. However, I trust that you can realize the desirability of having this question threshed out along broad lines by such a body as the American Society for Testing Materials and that your association will see fit to go on record as willing to co-operate with the committee of the American Society for Testing Materials when such assistance is invited.

After Mr. Powell's paper the members were invited to ask questions on any point they were in doubt of and many responded.

Prof. Abrams, of Urbana, Ill., gave a paper on the same subject and which was along the same lines as the one previous. Mr. Abrams' paper:

PORTABLE TESTING MACHINE FOR MAKING FIELD TESTS (By Arthur N. Talbot* and Duff A. Abrams.)

Recent developments in the manufacture of farm drain tile have emphasized the importance of having a simple standard portable testing machine which may be used for making tests of drain tile in the field or at the plant. The increasing use of tile of large size in farm drainage districts is well known. The competition between the clay tile and the concrete tile has brought up new questions. What strength shall be required for tile of a given size in order that they may be considered to be commercially first-class tile? In the case of concrete tile, what thickness, richness of concrete, method of curing and age of laying are necessary to fill the requirements for a first-class article?

A number of elements enter into the choice of a suitable method of testing for physical properties of drain tile. (1) A definite and important quality should be determined by the test. (2) The test should be simple, easily and quickly made, and should not require the services of an expert laboratory man. (3) The test should be of such a character as not to give unduly diverse results for test pieces of the same grade. (4) The machine to be used should be simple and inexpensive, easily adjusted to different sizes of specimen, and easily transported from point to point and easily made ready for use. It is believed that the machine described and presented with this article fulfills the requirements for making field tests of drain tile satisfactorily. This machine was designed by D. A. Abrams for use in the Laboratory of Applied Mechanics of the University of Illinois.

The machine consists essentially of a simple framework and a lever for applying the load by means of dead weight. The load applied through the loading lever may be blocks of iron, or stone, sand or other suitable material. After the test the dead load is weighed. To obtain the load on the tile, this weight is multiplied by ten, and a constant quantity due to the weight of the loading lever (about 100 lb. in this particular machine) is added.

The accompanying sketch gives the principal dimensions of the different parts. The photograph shows the machine with a 30-in. clay tile in place ready for loading. The machine measures 30-in. between uprights and will take tile up to 42-in. inside diameter.

The main members are of timber; metal plates and other shapes are used at points of concentrated load and for connections.

Metal knife edges are provided for the bearing of the loading lever on the top loading block and for taking the upward thrust against the top cross block. The knife-edge bearings on the block over the test tile are 5 in. center to center, and a single knife edge takes the end thrust. This gives considerable freedom to the top loading block and allows the load to be fairly central, although the tile may be conical in outline.

The bottom loading block is provided with two small half rounds of hard wood placed about 2 in. apart, which allow the tile to seat itself in place. The load is applied at the top along a single element. Cushions consisting of short lengths of flattened rubber-lined fire hose serve to distribute the load along the length of the tile and prevent any local concentration of the load due to irregularities in the top and bottom surfaces.

The top cross block can be placed and held in any position along the uprights to accommodate the machine to any diameter of tile up to about 42 in. By this means the machine is adjustable to the greatest variation in the size of the test tile and will apply the load to all sizes under uniform conditions.

In order to check the dimensions of the loading lever, it was calibrated by setting a pair of platform scales in the machine and loading up to about 500 lb. on the machine. It was then placed in a 10,000 lb. testing machine and loaded up to 4,000 lb. The greatest error observed for this range of load was less than 1%.

This machine weighs 225 lb. It should not cost more than \$15 to \$18 in a shop equipped for wood and metal working.

Up to the present date about sixty tests have been made on this machine on concrete and clay tile in sizes 12 to 36 in. inside diameter. The breaking loads varied from 1,400 to 5,000 lb. per tile.

An examination of this testing machine will show that it is simple in operation and that it is easily adjustable for different sizes. The tile which are out-of-round in different ways at the two ends will be easily taken by the machine and there is little chance for an unfair distribution of the load. The strip of hose gives some cushioning effect, and the load is practically distributed over the whole length in all cases. The method of loading along a line at the top and bottom was selected because of its simplicity. The arrangement of the machine allows a tile to be rolled into place and to be easily made ready for test. It is believed that the results obtained by different operators will agree quite closely.

If desired the modulus of rupture of the material may be determined from the bending moment developed and the dimensions of the pipe. For general purposes it will be preferable to report the load per foot of length of pipe for a given size. Possibly for some purposes it may be interesting to divide this load by the diameter of the pipe in inches and thus compare the results per inch of diameter for a pipe one foot long.

It has seemed the simplest way to fix at a definite distance apart the two strips on which the tile rests. An analysis of rings shows that when the bearing on these strips are 2 inches apart the formula for the bending moment will be but $2\frac{1}{2}$ per cent different from that for a single support for tile 6 inches in diameter and $\frac{1}{4}$ of 1 per cent for a tile 12 inches in diameter, while for larger sizes this variation will be much less. Under the conditions of such tests it would seem better to fix the distance for these strips and use a common expression for the formula for the bending moment for all sizes of tile to be tested. It would seem that $0.16 Qd$ is a satisfactory expression for the bending moment where Q is the concentrated load applied at the crown and d is the mean diameter of the tile. For the modulus of rupture (f) of the material the formula would be

$$f = 0.96 \frac{Qd}{l^2}$$

where l is the length and t the thickness of the tile along the top and bottom elements.

This method of testing was selected in preference to a method involving the bedding of the tile in sand or other material, because of the difficulty in embedding large tile in sand in such a way as to obtain a fair distribution of pressure and in securing the same distribution of pressure in different tests and because the method of concentrated loads will give a more definite index of the strength of the material.

In tests of materials it is not essential that the material shall be subjected to the same action in the process of testing that it will receive in service. The cold bend test of steel is one of the most useful and instructive of tests, but it differs radically from any condition of service in which the steel will be placed. The value of a test will depend upon the properties determined. In testing drain tile the method of applying concentrated loads has many advantages over that of applying distributed loads. Whatever the method of testing used, it will be necessary finally to determine the relation between strength of the test piece and the strength which is needed in the structure. In the case of tile to be used in a ditch of a given depth and a given soil the necessary test strength will have to be determined. Since the tests will have to be translated into the working conditions it would seem not necessary to attempt to make the conditions like the conditions in the ditch. It is of much more importance that the tests should be simple, direct and fairly uniform under varying conditions of tile and with different machines and different operators. Our own experience with this machine leads us to think that it would make a satisfactory means of determining the quality of drain tile.

*Professor Municipal and Sanitary Engineering, in charge of Theoretical and Applied Mechanics, University of Illinois.

*Associate Engineering Experiment Station, University of Illinois.

President Atwood then read a letter from Edgar Marburg, secretary-treasurer of the American Society of Testing Materials, in which Mr. Marburg stated that the society was going to appoint a committee of twelve on standard tests and specifications for drain tile. Three members of the committee to be clay tile manufacturers, three to be cement tile manufacturers, and the other six to be disinterested engineers. Upon a motion by a member the Interstate Association members voted to nominate three men from their number and recommend them for appointment on the committee. The nomination will take place on the last day of the session along with the election of officers. C. W. Boynton, of the Universal Company, is to be one of the men nominated.

C. K. Arp, of the Universal Portland Cement Company, then read a paper on proposed tests for plain concrete drain tile. This paper was also read at New York before the National Association of Cement Users. A copy can be had from P. H. Atwood, president of the Interstate Cement Tile Manufacturers' Association. The specifications have not yet been adopted.

A criticism of the above paper was then given by L. L. Bingham, of Estherville, Iowa, and several points were brought out, proving some parts of the specifications should be changed. A general discussion of the same paper, from a manufacturers' practical standpoint then took place.

At this juncture of the meeting a tense moment occurred while a flashlight photograph of the convention was taken by Kaufman, Weiner & Farley Company.

Richard L. Humphrey, Philadelphia, Pa., who was to address the meeting in the morning, was un-

avoidably detained, but coming in late said that he would speak at the last day's session. This talk promises to be one of the best on the program.

A very interesting and lively half hour followed, during which all members were heard on the subject, "What Is the Most Important Thing You Have Seen at the Cement Show?" There was not a great variety of opinions expressed on this subject, nearly all the men believing that the machines for making cement tile were the most important articles exhibited in the Coliseum.

The meeting then adjourned until Thursday morning at 9:00 o'clock.

Owing to the fact that this paper went to press before the last day's session of the convention was held we are unable to give an account of the proceedings, but the following is a copy of the topics to be discussed and of the business to be taken up:

THURSDAY, FEBRUARY 22, 9:00 A. M.

For Members Only.

Shall We Coöperate in Buying Cement, and Other Subjects?..... W. G. Middleton, Emmetsburg, Ia.
Election of Officers.

10:00 a. m., Open Session.

Steam Curing..... Jno. R. Moffit, Union City, Ind.

Shall We Exhibit at State Fairs?.....

..... E. L. Haines, Owatonna, Minn.

Side Lines for Tile Men.....

..... J. H. Mayer, Humboldt, Iowa

Rock Crushers..... D. W. Radical, Mankato, Minn.

The incoming members of the association who registered Wednesday were:

THE ATTENDANCE.

M. R. Corbett, Pena, Ill.
W. H. Kelling, Ceylon, Minn.
R. F. Mallory, Jolley, Iowa.
J. H. Mayer, Humboldt, Iowa.
L. L. Bingham, Estherville, Iowa.
A. B. Russ, Buffalo Center, Iowa.
E. N. Helm, North Liberty, Ind.
H. S. Young, Chicago, Ill.
W. E. Varney, Cedar Rapids, Iowa.
William Herman, Caro, Mich.
C. C. Quinn, Boone, Iowa.
J. J. Hammen, Jolley, Iowa.
A. T. Porterfield, Chicago, Ill.
J. D. MacKay, Detroit, Mich.
B. Blair, Woodstock, Ontario.
R. Munzenmaier, Churdan, Iowa.
O. A. Wall, Webster City, Iowa.
W. J. McCracken, Sioux City, Iowa.
G. F. Little, North Bend, Neb.
F. H. Hill, Timewell, Ill.
C. J. Davis, Timewell, Ill.
L. M. Van Aulen, Mason City, Ia.
D. A. Abrams, Urbana, Ill.
A. G. Abrand, Chicago.
Wm. Bailey, Spencer, O.
S. W. Hill, Osgo, Ia.
H. C. Benton, Armstrong, Ia.
Frank J. Lawson, Oxford, Ind.
H. D. Gerth, Fairmont, Minn.
J. E. Erickson, Armstrong, Ia.
G. H. Erickson, Armstrong, Ia.
Gowrie Cement Works, Gowrie, Ia.
W. C. Burell, Chicago.
C. C. Dawson, Marshalltown, Ia.
F. P. Wilson, City Engineer, Mason City, Ia.
T. J. Heas, Armstrong, Ia.
H. D. Roberts, Gallen, Mich.
C. A. Roberts, Gallen, Mich.
C. F. Hankel, Elmore, Minn.
R. B. Lawson, Oxford, Ind.
W. F. Huffman, Mason City, Ia.
Fred Spies, Grettinger, Ia.
H. C. Boffman, Greenville, Miss.

The American Concrete Brick Company is contemplating building a model factory for one of the \$50,000.00 machines invented by Frank R. Stehm for the manufacture of the enamel concrete brick. The factory will be built at Des Moines, Ia.

The Niles Art Stone Construction Company has been formed at Niles, O., by L. H. and August Young, Bliss K. Delin and W. C. Haise, of that city. It will manufacture cement building block and art posts for porch columns.

The Concrete Sand & Stone Company, of Youngstown, O., elected the following directors recently: A. A. Pauley, A. H. Buehrle, E. S. Walton, J. D. Gibson and R. Garlick.

The Youngstown Artificial Stone & Construction Company has secured a five year lease on its cement yard at Youngstown, O., and will remodel the plant to double its capacity and add a large amount of new machinery. Timothy Behan is manager.

The General Cement Products Company has been incorporated at Indianapolis, Ind., with a capital stock of \$25,000.00. They will manufacture cement products. The incorporators were W. J. Wiley, Joseph Zeigler and Charles K. Bogot.

MID-WEST.

Cement Exposition and Nebraska Cement Users' Association Convention Attracts Large Crowd at Omaha.

Omaha, Neb., Feb. 4.—On Wednesday morning the doors of the great Auditorium in Omaha were thrown open to an expectant public to inspect the Mid-West Cement Exposition under the auspices of the Nebraska Cement Users' Association, which held its convention on the stage of the Auditorium February 1, 2, 3.

Nearly up to within an hour of noon on the first day the clamor and noise throughout the hall, putting the finishing touches on decorations and connecting machinery with electric power, delayed the opening session of the convention, but did not interfere with the enjoyment of the good natured crowd which had come early to see the progress worked in the cement industry.

The attendance at this, the sixth annual convention of the Nebraska Cement Users' Association, was larger than any in the preceding five years, and the liveliest interest was taken in the papers read, and the discussions showed that members from the various parts of the state of Nebraska were anxious to add to their knowledge of what they knew concerning concrete and concrete construction. Exhibitors were loud in their praise of the management of the Auditorium, which extended all possible facilities to them, to make their exhibits attractive to visitors. Members of the association and exhibitors with one accord appreciated the boundless welcome Omaha gave them, through its Commercial Club.

Much talk was heard of prominent members of the state association and exhibitors commending and endorsing the advocacy of ROCK PRODUCTS, of the Nebraska, Iowa and Oklahoma state associations to hold their meetings at the same time and place, but in different halls, preserving their identity. This would insure one big Mid-West Exposition. This, it was believed, could be easily done, as these several state organizations would probably discontinue their shows in favor of the more pretentious one.

All in all, the Mid-West Cement Exposition came up fully to the sanguine expectations of the members of this organization.

OPENING SESSION, FEBRUARY 1.

President H. C. McCord at 11 o'clock a. m. called the meeting to order on the stage, of the Audi-

torium. There were fully five hundred members of the association in attendance.

Secretary Peter Palmer read the roll call, followed by the reading of the minutes of the previous meeting, which were adopted.

A recess was then taken to 1 o'clock p. m.

AFTERNOON SESSION, FEBRUARY 1.

At 1 o'clock p. m. President McCord called the meeting to order and introduced David Cole, president of the Commercial Club of Omaha, who delivered the address of welcome. He said in part: "On behalf of Omaha and the Commercial Club I extend to you a hearty welcome to our city. When you visit us next year we shall be glad to give you a splendid view of Omaha and several states besides Nebraska. Omaha is a growing and progressive city. It handles more money and does a larger volume of business than either Buffalo or Milwaukee or any other city in the country that has four times the population we have. We shall try our best to make you feel at home and make you feel that you want to come again next year."

President H. C. McCord, on behalf of the Nebraska Cement Users' Men's Association, responded briefly, thanking him for the cordial welcome. The exposition was then formally thrown open to the public and the meeting adjourned to Thursday morning.

MORNING SESSION, FEBRUARY 2.

A paper which was listened to with the greatest attention was the feature of the morning's meeting, and read by Charles P. Chase, consulting engineer of Clinton, Ia. This paper is in substance the same as that delivered by Mr. Chase at Cedar Rapids, Ia., and which was given in full in the January ROCK PRODUCTS.

After the reading of this paper by Mr. Chase it was moved and seconded that 1,000 copies of same be published in pamphlet form and be distributed among the members of the association. Carried.

City Engineer Craig, of Omaha, complimented Mr. Chase, saying he had hit the keynote in the cement paving question. Unless you have proper material, let it alone. There are cement pavers and cement pavers, as different as night is from day. The question of expansion is a matter hard to fathom. In New York engineers are doing much experimental work to solve this very problem. He told of cement pavement being used in the alleys of

Omaha, which proved very serviceable. He concluded by giving the members the benefit of his experience with concrete construction work in Omaha.

President McCormick appointed these members on the following committees:

Auditing Committee.

J. C. DeBolt, Beatrice, Neb.
W. B. Harris, Auten, Neb.
J. E. Watenpaugh, Newton, Neb.

Nominating Committee.

A. J. Jones, St. Edwards, Neb.
C. E. Lowe, St. Edwards, Neb.
Milo Brown, Sutton, Neb.
N. J. Peterson, Omaha, Neb.
Frank Berger, Hastings, Neb.

Resolutions Committee.

H. G. Calkins, Omaha.
L. V. Thayer, Minneapolis, Minn.
C. B. Lurick, Lincoln, Neb.

G. F. Lillie, of North Bend, Neb., gave an interesting ten minutes' talk on the manufacture of cement tile. He gave some very good and practical advice in regard to selecting location for plant; it should be located where good and cheap sand can be gotten; where good railroad transportation can be secured; sand storage should be taken into consideration; the plant should be equipped with the best machinery, which, although expensive and costly to maintain, is absolutely necessary for successful manufacture; sand should be screened for the manufacture of cement tile; the standard mixture should be 4 to 1, the average mixture is 3½ to 1. Then he gave a detailed description of manufacturing cement tile, illustrating it by the aid of a large chart or diagram.

Meeting adjourned.

THE BANQUET.

The officers and directors of the Nebraska Cement Users' Association and the exhibitors at the Mid-West Cement Exposition sat down to a banquet at the Paxton Hotel at 6 o'clock in the evening, tendered them by the Commercial Club of Omaha. Two hours were spent in good cheer by the guests, who enjoyed the sumptuous viands served and listened to good speakers who tendered thanks on behalf of the guests for the hospitalities the city had showered on the visitors under the auspices of the Commercial Club, and to the Auditorium management. Then the exhibitors returned to the Auditorium, where their presence was required at the various booths that night.

President H. C. McCord acted as impromptu toastmaster, who filled that position to the delight of all the guests.

Will A. Campbell, the Commercial Club's representative, spoke particularly of the show's success. "You are invited here tonight because from the standpoint of the Omaha business man you have made good. The receipts of one day are five times as large as those of a corresponding day of the poultry show, which we at one time considered a big show." Citing a long list of the uses to which cement is put here in Omaha, he fully justified the idea of a cement show. He referred for one thing to the Henshaw Hotel, the first hotel to be built wholly of cement. In conclusion he proposed the combination, naming Kansas, Iowa and Nebraska as the states whose cement forces properly should be combined in one organization. He pointed out how remarkably successful the exhibition here had proved from a financial and business point of view.

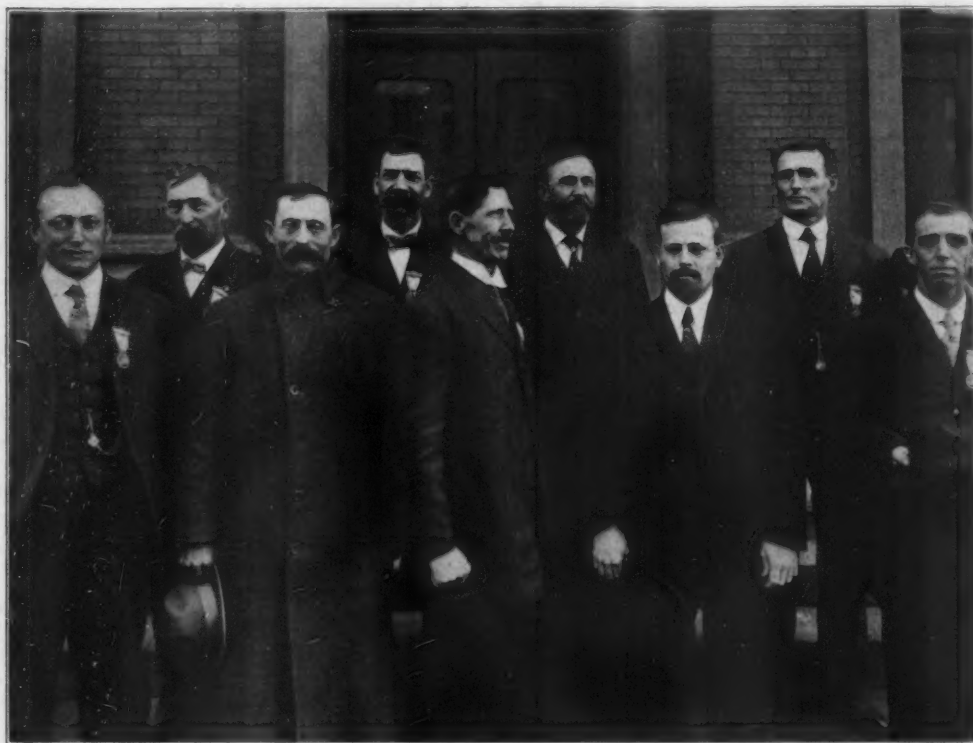
J. M. Gillian, manager of the Auditorium, also congratulated the cement men upon the success of their show and promised them even better treatment next year.

Secretary Peter Palmer injected a good deal of humor in his talk and could not say enough of the cordial treatment he had received at the hands of Mr. Campbell, with whom he perfected arrangements to bring the convention to Omaha. "You must know that Mr. Campbell was the representative of his club and I found him the liveliest wire of the liveliest bunch of business men I ever met."

"L. V. Thayer, of Minneapolis, was called on by the toastmaster. He was not only happy in his remarks, but made all visitors feel that they would like to come again next year."

MORNING SESSION, FEBRUARY 3.

On Friday morning Thomas H. MacDonald gave an illustrated lecture on "Concrete Bridges and Culverts." He is the engineer of the Iowa State Highway Commission at Ames, Iowa. He went into exhaustive detail of the construction of these structures and showed the superiority of concrete bridges and concrete culverts over the wooden va-



OFFICERS AND EXECUTIVE COMMITTEE OF CEMENT USERS' CONVENTION.

Left to Right—Frank Berger; J. M. Kreiger; Peter Palmer, Secretary; I. E. Watenpaugh; H. C. McCord, President; T. C. Daugherty; C. F. Lillie, Vice President; J. C. Tracy; H. K. Park.

NATIONAL BUILDERS' SUPPLY ASSOCIATION.

(Continued from Page 54D.)

keep his own teams and haul out the two, three or five-barrel lots that are ordered."

L. G. Powell, of Cleveland, delivered a very vigorous argument along the following lines:

"It seemed to him one of the main objects of this organization was to prevent the establishment of a third manufacturing plant when two were shut down a good portion of the time, because, if a third mill enters the field, they were bound to fight for trade and get it one way or another, and the ultimate result would be that they would cut prices to a point below where anyone could make a profit and sell direct to the contractors, if necessary, in order to get a foothold. The only instructions they would give their salesmen would be 'Get the business any way at all.'"

"Reciprocity is a necessity, and I firmly believe reciprocity and a fair differential on profit with harmonious relations can then be kept up between the manufacturer and the dealer, and the manufacturer will be willing to cope with the contractor with the same or a higher price than you can afford to deliver the goods to him for. It is absolutely essential that the manufacturer and the dealer work in harmony for the mutual interest of both."

Question No. 2: Why do we not increase our income by advertising, etc., in the programs we get up?

This question was answered by Secretary Wardrop. In 1909 this whole question was thrashed out by the executive committee and the general consensus of opinion obtained by a consultation with many of the members was that such a procedure consisted largely in the manner of a hold-up and the executive committee felt that the association was too big and too broad to have its members feel that anything connected with their meeting should be considered in that light. The executive committee also felt that such a proposition would not do justice to the trade papers that have done so much to foster the interests of the industry and made such strenuous efforts to bring the manufacturer and dealer in closer touch with each other. They also felt that the National Builders' Supply Association was amply able to be self-sustaining. The secretary also voiced the sentiment that the trade papers had been very liberal in giving the association space and that ROCK PRODUCTS especially has done everything in its power to foster and promote the aims and objects in the National Builders' Supply Association.

Question No. 3: Why does the small dealer look on the builders' association as being only for the large dealer?

This was answered by the secretary in a very brief and concise form. He said that a few years ago there was a section in the by-laws, which is now obsolete, stating that only those were eligible who were doing business in a city of 25,000 population or over. He also said that this idea probably was fostered by the fact that the officers had been picked mainly from the fact that they were able to handle big business, belonged to big firms, had shown their ability and were successful business men. The little man will find that his money is well spent in joining an association and that he will derive more profit in proportion to the money expended than the big man.

Question No. 4: Why do we not have a grievance committee instead of putting such matters through the executive committee, which is widely dispersed with many and varied duties and cannot give much attention to complaints?

From the general discussion on this question, the opinion seemed to be that while a grievance committee might be a good thing, under existing circumstances it would probably be better to leave such matters as this in the hands of the executive committee, putting complaints through the secretary, and give the executive committee power to call in the aid of local men to assist in adjusting these differences.

Question No. 5: Would it not be advisable to have two or three vice-presidents in the West with power invested in them to act in certain matters?

The outcome of the discussion of this was that the time was not yet ripe for this move, but that, in four or five years, it would probably be a necessity and that when this necessity arose, it would also be necessary to have one or two assistant secretaries to cover this territory, and devote their entire time to the work.

Question No. 6: What attitude should we take with reference to materials returned?

From the discussion practice in this matter varies in different localities. One dealer charges for haulage both ways. Another dealer said he considered, if a contractor does not know enough to order what he wants, it is up to him to take care of it. Another dealer said he encouraged his contractors to take more than he thinks they need and willingly hauls back anything that is left over, rather than make a

number of small deliveries on hurry-up orders at inconvenient times.

Question No. 7: Is the motor truck an economical proposition for the transportation of builders' supplies?

An abstract of the discussion seems to bring out the facts that the motor truck for long hauls with heavy loads was a very economical proposition, if provision was made for rapid loading and quick unloading. The economy of the truck is increased by ability to keep it in constant service during the period of time used per day. One of the greatest costs is tire repairs and it would be advantageous to use larger wheels where the traffic is over bad streets.

The experience of those who have used them is that they find they can deliver loads on reasonably level ground, although soft, where their teams could not get through. The machine should be purchased with a view to the load and the speed which is expected from it, and should be operated on that basis.

George T. Calvert, of T. Calvert's Sons, Detroit, Mich., addressed the association, highly complimenting the officers for their efforts for the past few years, and stated that, through their advice, the Detroit men had come together and established a credit association and employed an attorney, and were no longer imposed upon by dead beats. He wound up his remarks by a very hearty and urgent invitation that the next meeting be held in Detroit, and assured the members that the Detroit builders' supply men were amply able to take care of the association without the necessity of any holdups like those which have been previously mentioned.

"A Square Deal in the South."

(By Charles Leonard Johnson.)

To the President and Members of the National Builders' Supply Association: Your worthy secretary requested me a short time ago to make an address on the subject of "A Square Deal in the South," and I assure you that it certainly is a pleasure and an honor to have the privilege of addressing this organization, especially on a subject in which I am deeply interested.

For the past eighteen years the speaker has watched carefully the market conditions of the country and can safely say that the National Builders' Supply Association has accomplished what very few other organizations have been able to do. You have today an organization which, without question, has been most beneficial to every one concerned, both to the dealer as well as the manufacturer.

The speaker well remembers the old Tri-State Builders' Supply Association, which afterwards changed its name to the Interstate Builders' Supply, and then by the efforts of the large dealers throughout the central states, it changed its name to the National Builders' Supply Association, taking in members from all over the country. I have gone back a little into history for the simple reason that I wanted to illustrate the point that the southern dealers have rapidly taken advantage of the methods pursued by their northern brethren. Texas has fallen under my observation more than any other state of the South, for the reason that I live in Texas, and am able to watch the market conditions, and can safely say that the "Square Deal" as applied to Texas and the adjoining states has been a great success.

You will find the manufacturers of all lines of building material such as cement, lime, sewer pipe, plaster, etc., do their entire business through the recognized dealer, and in the state of Texas, which, as you well know, is the largest in the Union, covering 265,000 square miles, there is not a dealer that has a serious complaint to make against a manufacturer for not being treated right.

The contractors as a rule are pleased at the methods in which business is conducted by the manufacturers, and they prefer to buy their material through the recognized dealer, but once in a while you will find that the contractor feels that he is being slighted, and then it is a case of where you have to be diplomatic in handling the proposition. Today the contractors of Texas thoroughly understand that it is policy for them to buy from the dealer, because the dealer has to act as his banker in 99 cases out of 100, taking care of the delivery of material which he has ordered, taking care of his account, discounting his notes, and assisting him in every possible way.

When I first started in traveling on the road selling Portland Cement I had the record of being the only salesman that confined his sales strictly to the dealer, and I have never changed my policy, because it is the only one that will ever win out in the long run. Of course, you have to make exceptions of sales to railroads and United States Government, and municipal work, but outside of this you will find that the manufacturers of Portland Cement as well as other building material are working hand in hand with the dealer, to the satisfaction of every one concerned.

Speaking of "Square Deal," the buyer is entitled to a square deal all over the world, and as a rule that is all he asks. It is the lowest price, according to the quantity purchased, nothing more or less, and being satisfied that he has secured the best price possible he goes ahead and makes his sale without a complaint.

One more word before closing, and that is in reference to the Portland Cement industry of the great Southwest. Texas is producing at the rate of 2,000,000 barrels a year, and it depends, of course, largely what the weather conditions are as to real consumption of the product. Last year the mills were all very successful and operated for eleven months out of twelve and practically selling their entire output. The "Square Deal" in the South is not a problem any more, it is a success, and every one in the building material business in that part of the country is satisfied that they are pursuing the only policy which will pay in the long run.

LIBERTY AND LAW IN ASSOCIATION WORK.

(By Hon. C. D. JOSLYN, OF DETROIT, MICH.)

The Sherman law went into effect July 2, 1890, that being the time when it was approved by President Harrison. Since that time many of its features have passed through the crucible of the judiciary and have withstood the constitutional test. No part of that law, so far as I am aware, has as yet been held invalid. This, however, is not to say that it has proven to be all that was expected of it or exactly what is most desired. Nor is it to say that pretty much all the good that has been accomplished since its passage might not have been accomplished by recourse to the common law.

Since the enactment of the Sherman law there have been a great number of decisions in the United States Circuit Courts of Appeal and the Supreme Court of the United States, yet its exact scope has not yet been defined and probably never will be. The penal portion of the law is now under consideration in the Supreme Court of the United States. The conditions which brought the law into being were very graphically set forth by Senator Sherman in a speech made by him in support of the measure on March 21, 1890, before the Senate of the United States, in which he said, among other things:

"Associated enterprise and capital are not satisfied with partnerships and corporations competing with each other, and have invented a new form of combination, commonly called 'trusts,' that seeks to avoid competition by combining the controlling corporations, partnerships and individuals engaged in the same business and placing the power and property of the combination under the government of a few individuals and often under the control of a single man called a trustee, a chairman or a president. The sole object of such a combination is to make competition impossible. It can control the market, raise or lower prices as will best promote its selfish interests, reduce prices in a particular locality, and break down competition, and advance prices at will where competition does not exist. Its governing motive is to increase the profits of the parties composing it. The law of selfishness uncontrolled by competition compels it to disregard the interest of the consumer. It dictates terms to transportation companies; it commands the prices of labor without fear of strikes, for in its field it allows no competitors. Such a combination is far more dangerous than any heretofore invented, and when it embraces the great body of all the corporations engaged in a particular industry in all the states of the Union it tends to advance the price to the consumer of any article produced. It is a substantial monopoly injurious to the public, and by the rule of both the common law and the civil law is null and void and the just subject of restraint by the courts."

It will be noticed that the senator himself admitted that the evils he complained of could be redressed at common law. So the inquiry naturally arises why enact a remedial statute when the remedy was already at hand? One answer seems plain. There was then as now a great popular clamor against the trusts and Senator Sherman, although a great statesman, was also a politician.

Since that day a great many politicians have followed in his wake until in a large number of states there now exist anti-trust and anti-monopoly laws patterned in a great measure after the Sherman law. Some of them have undertaken to exempt farmers and working men from the operation of the law, but in most instances such exemptions have led the courts to hold them to be mere legislation and invalid. All of them should have been so held. It may be said also that many states have made such laws much more drastic than the Sherman law, yet I believe all have been upheld by their courts in this respect. Whether all this is ultimately for good or for evil remains to be seen.

If when farmers are in the majority in a state they can enact laws which apply to all kinds of business except their own; if so-called labor men can by power of their vote secure the passage of laws regulating the conduct of all but themselves and such laws are upheld as some have been, then we have a government not by uniform law, but by a despotic majority. Doubtless, however, all these questions will work themselves out satisfactorily in the end.

It is a well-known principle of the common law that men may not enter into contracts which are in restraint of trade nor contracts to hinder competition or to create a monopoly, and no statute is necessary to enforce this rule. By this rule all men, including retail dealers in various communities, are bound. They have never had any lawful right to get together and specifically or tacitly agree upon a price at which their goods or various products shall be sold, although labor men may get together and agree that they will not sell their labor except at an agreed upon price and that, too, even though such an agreement enforced by a strike at an opportune time may bring their employer to financial distress and bankruptcy. Such a distinction does not appeal to one's sense of fairness or right; nevertheless we are all confronted by these conditions and must submit to the rule of law which binds us all.

The Sherman law in its application is limited to interstate trade and commerce, and in most instances I suppose does not affect the retail dealers of the country to any great extent. But the state laws do and they affect the various associations of retailers and in many instances disastrously.

When the state, as is often the case, undertakes to define what shall be understood as a restraint of trade or what shall be understood to be a monopoly or a hindrance to competition, it must do so by language which sometimes necessarily misstates the fact, because it may state that to be a restraint of trade which in fact is not or state that to be a hindrance to competition which is not so in fact.

Now, these statutes are not brought about by any evil design on the part of legislators, but by an honest desire to accomplish something for the general welfare, but in framing the acts language necessarily is used which sometimes touches and makes criminal things that are not evil in fact. It is true also that some associations are popularly believed to be wrong, which, if fairly understood, would be thought otherwise. In short, acts of the character under discussion often when applied to existing conditions denounce the good as well as the evil. In other words, these laws may work well in some cases and bad in others.

What, then, is to be done? Are such associations as the Builders' Supply Association to be abandoned? I am sure it is not necessary.

While it is undoubtedly true that many organizations in times past have undertaken to control prices, have undertaken to divide territory, which is another way of controlling prices and hindering competition, and while it may be true that some are doing this even at the present day, it is equally true that the great majority of them are not doing these things. I am well aware that some of those few associations which undertake to control prices and divide territory have done so not with any desire to do evil to the public, but with a desire of preventing the public from being defrauded. It has been true in the past, is now and probably always will be true that men can be found who will sell third class goods for first class goods, and in bidding for trade will by this means undersell the man or the firm which will not stoop to such deceit, but offers first class goods for a fair and honest price. It is such conduct as this on the part of dishonest men which all right-minded people in forming associations have sought to change. But in doing so they have used means which the law denounces as illegal. It is also true that associations have been formed for the purpose of controlling competition and prices and enriching themselves. That the law should reach such organizations goes without saying, but there is no way of framing a law which will not apply alike to the well disposed as well as the evil disposed. And therefore it is that I say that these laws by Congress and by the several states sometimes work evil and sometimes good.

I am sure that men have a right to associate themselves together for the purpose of standardizing their business and to agree that it shall be placed upon a higher plane. I am sure that men have a right to agree to do all things which are right and honest and beneficial to them and to the public. I am sure they may keep out of their organizations all those who resort to dishonorable tricks of trade or deal unfairly with their associates or with the public. I feel certain that they have a right to inform themselves by all legitimate means as to the character and conduct of those who are engaged in their line of business. I am sure that there is a mutual advantage to all to see to it that the standard of honesty and fair dealing is raised higher and higher, so long as those things are not resorted to which are denounced by law. It cannot be deemed a conspiracy for an association of men to try to dissuade others from indulging in trade conduct which is neither fair nor honest. And I am sure that most of the organizations of the present day have a common purpose to live within the law and at the same time encourage honorable and fair dealing.

But the public does not know this and is suspicious perhaps of almost every trade organization. It is not unnatural that the public should have these suspicions because trade associations in the past have at times resorted to unlawful means to increase profits. The public knows that there have been agreements to control prices and to stifle competition. The first work of the present organizations in my judgment is to educate the public as to the work and the objects of these associations. I see no reason then why with the restrictions which I have pointed out, men engaged in any particular trade may not standardize the ethics of that trade and exclude from their organizations those who refuse to live up to that standard. And this work is being done almost wholly by trade.

But the general public does not know this. It should, however, be informed. Let the daylight in on all the work of your organizations, and take the utmost pains in the several localities to inform the public precisely what is going on. Most business men are advertisers in the papers of the various localities. While there is much to be criticized in the conduct of the press of today, yet it remains to be said that on the whole they make for the good of the community, and if the newspapers know what is being done, they will tell the public. Let all customers understand fully the work of these organizations; let them be shown that in them all men are working for higher and better ethics of trade, elevating the standard of honesty in business. Of course, this will take time, but in the end public sentiment will favor these organizations. When the public is properly informed, its judgment may be relied upon.

To all these business associations I say, keep up your organization, keep in touch with your customers, keep in touch with the public and then you will become an organized political power and you may then elect members of the state legislatures and of Congress who will sit up and take notice of your needs.

It seems to be generally conceded that the Sherman law, and of course the various state laws, need to be amended so as to become less oppressive where there is now oppression. So long as the public is unenlightened as to your aims and methods, you will not get these laws amended. Turn your attention first to the public.

I repeat, take the public into your full confidence, deal openly and fairly with your newspapers as well as with your customers, and you will have their friendship and support (all except those which are yellow) to the end that the public may know that your associations are built on the solid foundation of legal and moral right. Then get after the politicians. They will come as soon as you show them public sentiment is with you.

This is no Sunday school preaching—it is business. I say again, keep your associations in good working condition, touch elbows all the time, march in solid column, assist in defeating the political agitators and adventurers who seek seats in the state legislatures and in Congress, and give your undivided strength to the men who by their past conduct have earned your respect and confidence and the respect and confidence of the entire community.

THE ANNUAL BANQUET.

They were gathered in the Florentine room to the number of two hundred, all the power, all the talent, all the chivalry and all the eminencies of the builders' supply industry of America. There was music and song, poetry and flowers, with all the comfortable feelings of good fellowship and confidence in one another that sprang from the heart to heart work of the past two days. They were all boys in spirit, in spite of the sprinklings of bald pates and a few gray hairs.

President Charles Warner acted as toastmaster and proved himself to be fully equal to such a trying occasion. In every way our president makes good with the members, and his better acquaintance only adds to his popularity and increases the high esteem of his powers. Every time he spoke he had a happy storiette to flavor his expressions.

The culinary achievements that were placed before the banqueters were all that could be desired, from relish to coffee and cigars. These were properly interspersed with wine and songs of the day. Every one participated in all of the good things, both material and sentimental. Once in a while the national anthems were cheered to the echo.

Judge Ninian H. Welch, of Chicago, was the first speaker introduced. He responded to the toast of "A Few Guesses at the Truth." He began by saying that he had been looking upon this gathering as a garden of good fellowship. He felt that poetry and sentiment are the only appropriate ideas to invoke upon any banquet occasion. The speaker used many beautiful poetic allusions, and went further, to say that an epic is yet to be written someday, by someone qualified to do it, that will weave the romance of industry—the mine, the mill, the sand dredge, having the metre of heavy machinery and the measure of great power units in action. The system of construction and the assembling of materials, that is building and is to build a new and more wonderful Babylon than that which was known to the ancients, and all this perhaps in an architecture yet unknown but already suggested in the minds of the men assembled here. It will be the poem of the battle of bread

and butter. It is impossible to speak on this anniversary without mentioning George Washington. He was one of those great characters that belong to the world, to humanity. At the time of his death the British channel fleet carried their flags at half mast, and on the Champs de Mars Frenchmen at the same time were doing martial reverence to his memory. It is meet and proper that this observance be perpetuated, for patriotism is never lost.

The speaker's quick perception observed the attendance of the ladies of the convention in the balcony, and remarked that all of the good in man has always been dedicated to woman, and it is also all derived from woman. In closing, the speaker paraphrased an Hindoo poem on the materials, all adjectives of beauty from which their gods made the first woman.

President Warner read a telegram from former President Frank S. Wright, of Chicago, in which he expressed his regret at not being able to be present. The state of Mr. Wright's health will not permit him to stay in Chicago in winter time, so, being an inveterate fisherman, he spends cold weather months in Florida or California, the latter being his present location.

The toastmaster introduced J. Maxwell Carrere, who explained in his dignified way that it was his pleasant duty to formally present to F. D. Meacham, as the proxy of Mr. Wright, his partner, the work of art that expresses the friendship and admiration of the association for the services and character of Frank S. Wright. It was very gracefully done.

All the time Mr. Carrere was speaking, Secretary Wardrop held aloft the framed copy of the engrossed resolutions which were being presented to Mr. Wright, a copy of which is published in this number of ROCK PRODUCTS.

In response Mr. Meacham, speaking for Mr. Wright, expressed the feeling of appreciation that such sentiments called for. He spoke of the forty-odd years of partnership; how, as boys, they started in business and grew up together. Mr. Wright is a firm believer in this association, and regrets his absence. Mr. Meacham called upon a brother of Frank S. Wright to speak for him.

Mr. Wright said that he knew how much his brother appreciated the honor of leadership that had been voted to him by the members of this association, as expressed to him on several occasions when they were together.

The toastmaster introduced John R. Morron, president of the Atlas Portland Cement Company, as a new member of the builders' supply business who is taking great interest in one of the most important lines.

Mr. Morron told a couple of good-pointed stories, and expressed his respect for the important position that the dealer occupies in the handling of building materials. He pledged his efforts in the direction of co-operation with the proper promotion of the mutual interests of manufacturers and dealers.

Again the toastmaster was ready with a witty remark, as he called George T. Buckingham, the next speaker, to his feet.

Mr. Buckingham recognized the captains of industry from thirty states, and drew a witty parallel by the route of a story. Once on a time a man had to make his will before coming to Chicago. He would go to the well and say "bye-bye old well, there will be no more water for me"; to an old tree he would say, "bye-bye old tree, no more of thy gracious shade for me"; then he would look up to the sky and say "No more God either." Now all this is changed; when the invitations went out for the present meeting, the universal exclamation was "Good, by God, going to Chicago."

Now, on Washington's birthday, one should speak only the truth. That is unquestionably the reason why two lawyers were chosen as the speakers at this banquet. (Laughter.)

Anyway we can be true to history, to the makers of our republic and to ourselves, and this is the spirit of Washington's birthday. The speaker considered Washington, Hamilton, Jefferson, Franklin, Monroe and Jay as the makers of the most perfect government that the world has ever seen, one well worth perpetuating and keeping alive with patriotic sentiment.

John Hipskind, of Philip Hipskind & Son, Wabash, Ind., dealers, was present at all the sessions and visited every booth at the cement show before returning home. John Hipskind is also a contractor and has a large job for a sewer at Fairview, a suburb of Richmond, Ind.

Raymond Mather, of Mather Bros. Co., Richmond, Ind., is one of the young members of the N. B. S. A. Raymond was much interested in the proceedings of the convention and attended every session.



WILLIAM E. SHEARER, SALES MANAGER OF THE UNITED STATES GYPSUM CO., FLANKED ON THE LEFT BY F. W. FARRINGTON, AND ON THE RIGHT BY W. L. KRIDER.

Builders' National Supply Association GREETINGS

At the Eleventh Annual Convention of The National Builders Supply Association of America, held at the Congress Hotel Annex, Chicago, Illinois, on the twenty-third and twenty-fourth of February, one thousand nine hundred and ten the following resolutions were unanimously adopted.

Whereas

Frank S. Wright

HAVING SERVED THE
NATIONAL BUILDERS SUPPLY
ASSOCIATION OF AMERICA

as a member of the National Executive Committee for several years, and as its National President for the year just closed and on account of illness and the recommendation of his family physician finds it necessary to relinquish the office at this time.

And Whereas

we deeply regret the health condition which makes his action necessary, and accept with much hesitancy his retirement from office of one who so admirably and faithfully discharged the important duties of the highest position within the gift of the National Association, and find comfort and consolation only in the fact that we are still to have the benefit of his wise counsel and his cheerful presence in all that tends to dignity and unify the work and to continue to enjoy that rare personal magnanimity for which he is known and admired.



James G. Lincoln



John A. Kling



J. C. Adams



Gordon Willis



Frank S. Wright



Walter F. Jabneke



V. H. Kriegshaber



A. E. Bradshaw



Charles Warner

Therefore be it
Resolved That

we extend to him our sincere appreciation of the loyalty, courtesy and untiring effort which has so largely contributed to the success and benefit of the membership for his diligent and faithful work at all times, and in all places, and his unceasing personal interest in the welfare of his associate officers and the membership generally, all of whom will ever hold him in high personal regard and esteem and do hereby and now seal these tokens of friendship with this heartfelt and sincere expression of their esteem and appreciation.

Furthermore be it
Resolved

this preamble and resolution be spread upon the records of The National Builders Supply Association and indelibly written upon the hearts of his legion of friends, there to remain a precious possession and ever present inspiration to higher aims and nobler deeds also.

RESOLVED

That a copy of these resolutions be suitably engraved and presented to our Friend, our fellow worker, our retiring National President.

FRANK S. WRIGHT.

REGISTERED ATTENDANCE N. B. S. A.

- F. W. Farrington, U. S. Gypsum Co., Minneapolis, Minn.
 Richard Kind, Toledo Builders' Supply Co., Toledo, O.
 Harry S. West, Toledo Builders' Supply Co., Toledo, O.
 P. H. Degnan, Toledo, Ohio.
 R. E. Do Ville, Ohio Builders' Supply Co., Toledo, O.
 Wm. A. Rabe, Kenton Supply Co., Covington, Ky.
 F. H. Kinney, Hyde Park Supply Co., Cincinnati, Ohio.
 C. H. Stamms, Marion M. Allen, Newport, Ky.
 Thos. M. Magiff, Knickerbocker Portland Cement Co., New York.
 G. J. Parke, V. N. Parke & Son Co., Decatur, Ill.
 B. F. Swett, Lehigh Portland Cement Co., Indianapolis, Ind.
 Chas. G. Reed, Meacham & Wright Co., Chicago.
 Edward I. Cruise, Meacham & Wright Co., Chicago.
 Fred Goepper, Indianapolis, Ind.
 Arthur R. Black, American Gypsum Co., Port Clinton, Ohio.
 F. J. Griswold, American Gypsum Co., Port Clinton, Ohio.
 H. A. Rogers, A. B. Keepert Co., Indianapolis, Ind.
 C. M. Timmons, Kosmos Portland Cement Co., Louisville, Ky.
 J. D. Harrison, Harrison Waterproofing Co., New York City.
 A. C. Horn, A. C. Horn Co., New York City.
 William Price Miller, New York City.
 J. A. Henly, American Cement Plaster Co., Lawrence, Kansas.
 Henry W. Classen, Maryland Lime & Cement Co., Baltimore, Md.
 Fred G. Soxman, American Cement Plaster Co., Indianapolis, Ind.
 B. A. Williams, American Cement Plaster Co., Lawrence, Kan.
 Albert Moyer, Vulcanite Portland Cement Co., New York City.
 J. W. Cogley, Braddock, Pa.
 W. A. Holst, Toledo, Ohio.
 B. W. McCausland, Jr., U. S. Gypsum Co., Cleveland, Ohio.
 W. E. Shearer, U. S. Gypsum Co., Chicago.
 D. K. Thompson, Jr., Columbus Builders' Supply Co., Columbus, Ohio.
 N. E. Holden, Danville, Ill.
 Mrs. H. A. Rogers, A. B. Keepert & Co., Indianapolis, Ind.
 Horace C. Irwin, Springfield, Ill.
 Fred A. Schmoeger, Atlas Portland Cement Co., Chicago.
 D. L. Mather, Mather Bros. Co., Richmond, Ind.
 J. C. Adams, D. J. Kennedy Co., Pittsburg, Pa.
 R. B. Mather, Mather Bros. Co., Richmond, Ind.
 E. L. Hatfield, The Radford Publication, Chicago, Ill.
 John O. Pew, The Youngstown Iron & Steel Co., Youngstown, Ohio.
 Philip Hipskind & Sons, Wabash, Ind.
 Hans H. Wagner, Mather Bros. Co., Richmond, Ind.
 Charles E. W. Wagner, Mather Bros. Co., Richmond, Ind.
 J. W. Windsor, Houston Bros. Co., Pittsburg, Pa.
 John J. Voelkel, J. J. Clarke Co., Ltd., New Orleans, La.
 W. T. Akers, Akron Vitrified Clay Mfg. Co., Akron, O.
 Charles Schmutz, Crescent Portland Cement Co., Wampum, Pa.
 Fred W. Fogarty, The Granite Clay Co., Akron, Ohio.
 John A. Connelly, Thomas Connelly, 84 La Salle St., Chicago, Ill.
 W. H. Bassler, Western Clay Products Co., 1123 Chamber of Commerce, Chicago.
 Geo. R. Ford, Rock Products, Chicago, Ill.
 E. H. Defebaugh, Rock Products, Chicago, Ill.
 C. C. Beebe, Dealers' Record, Chicago, Ill.
 Chas. D. Warner, Dealers' Record, Chicago, Ill.
 Geo. A. King, Dealers' Record, Chicago, Ill.
 W. A. McCall, Dealers' Record, 185 E. Jackson Blvd., Chicago, Ill.
 Wm. H. Stone, Manufacturers' Record, Baltimore, Md.
 Harry P. Boyd, National Building Supply Co., Baltimore, Md.
 Walter F. Jahncke, New Orleans, La.
 E. S. Walton, The Youngstown Ice Co., Youngstown, O.
 W. L. Krider, U. S. Gypsum Co., Chicago, Ill.
 Geo. S. Knapp Bros. Mfg. Co., Chicago, Ill.
 A. H. Apted, Grand Rapids Plaster Co., Grand Rapids, Mich.
 F. S. Culver, The Ohio & Binns Retarder Co., Port Clinton, Ohio.
 Everett E. Swiney, Knapp Bros. Mfg. Co., 2419-25 W. 14th St., Chicago, Ill.
 A. H. Gallagher, The Ohio & Binns Retarder Co., Port Clinton, Ohio.
 Bernard L. Johnson, Dealers' Record, 185 Jackson Blvd., Chicago, Ill.
 P. L. Fraser, Secretary Builders' Exchange, Toronto, Ont.
 James Robertson, Cut Stone Contractor, Toronto, Ont.
 R. P. Orr, Toronto Exchange, 37 Quinn St., E. Toronto, Ont.
 W. T. Rossiter, The Cleveland Builders' Supply Co., Cleveland, Ohio.
 J. W. Heck, Atlas Portland Cement Co., Chicago, Ill.
 J. E. Lochley, Newago Portland Cement Co., Grand Rapids, Mich.
 V. H. Kriegshaber, V. H. Kriegshaber & Son, Atlanta, Ga.
 E. W. Bond, Bond & Sarnow Co., Milwaukee, Wis.
 Crug C. Tews, Tews Lime & Cement Co., Milwaukee, Wis.
 Christ Sarnow, Bond & Sarnow Co., Milwaukee, Wis.
 Herman Frange, Tews Lime & Cement Co., Milwaukee, Wis.
 C. H. Jaffe, The Jaffe Co., Boston, Ohio.
 Geo. T. Calvert, J. Calvert's Sons, 145 Griswold St., Detroit, Mich.
 Geo. H. Brittnett, Brittnett Co., Ltd., Toronto, Ont.
 A. E. Bradshaw, Indianapolis Mortar & Fuel Co., Indianapolis, Ind.
 Charles M. Kelly, James C. Goff Co., Providence, R. I.
 Fred G. Langner, Langner Mfg. Co., Cleveland, Ohio.
 H. M. Picher, Atlas Portland Cement Co., Chicago, Ill.
 Mrs. F. E. Malott, Malott Coal & Lime Co., Indianapolis, Ind.
 S. M. Marquis, Heppenstall & Marquis, Pittsburg, Pa.
 Mrs. N. E. Holden, N. E. Holden, Danville, Ill.
 J. Maxwell Carrere, Blanc Stainless Cement Co., Allentown, Pa.
 A. H. Lauman, National Mortar & Supply Co., Pittsburg, Pa.
 Edward Quebbeman, Universal Portland Cement Co., St. Louis, Mo.
 Leo F. Caproni, V. S. Column Co., Chicago.
 E. G. Westerberg, Chicago Fire Brick Co., Chicago.
 W. T. Chailier, Atlas Portland Cement Co., Chicago.
 T. F. Breen, Cardiff Gypsum Co., Fort Dodge, Ia.
 T. J. Evans, Jr., Evans Clay Mfg. Co., Uhrichsville, Ohio.
 A. W. Sommers, McLaughlin Building Material Co., Chicago.
 C. C. Quincy, Atlas Portland Cement Co., Chicago.
 John G. Evans, Atlas Portland Cement Co., Chicago.
 K. E. Lyman, Jamestown Paint & Varnish Co., Jamestown, Pa.
 Henry Mostberger, Mostberger Iron Co., Buffalo, N. Y.
 John C. Donnelly, McLaughlin Building Material Co., Chicago.
 W. W. Sawyer, Rockford Cement Stone Co., Rockford, Ill.
 R. H. Rader, Universal Portland Cement Co., Pittsburg, Pa.
 Albert Cone, American Lumberman, Chicago.
 S. C. Penfield, American Clay Machinery Co., Bucyrus, Ohio.
 H. W. Foote, North Western Expanded Metal Co., Chicago.
 C. L. Powell, North Western Expanded Metal Co., Chicago.
 C. S. Mooney, North Western Expanded Metal Co., Chicago.
 L. A. McHale, Lumber World, Chicago.
 Carol M. Emerson, Michigan Gypsum Co., Grand Rapids, Mich.
 C. W. Lansing, Brick & Clay Record, Chicago.
 W. E. St. Clair, Castalia Portland Cement Co., Castalia, Ohio.
 George L. Bradshaw, Indianapolis Mortar & Fuel Co., Indianapolis, Ind.
 S. Dana Lincoln, National Mortar Co., Washington, D. C.
 John Whorrey, Northwestern Lime Co., St. Paul, Minn.
 T. W. Spinke, Covington, Ky.
 A. C. Brown, Jr., Cook & Brown Lime Co., Oshkosh, Wis.
 W. B. Lensing, H. A. Lensing, Evansville, Ind.
 A. Y. Gowen, Cleveland Builders Supply Co., Cleveland, Ohio.
 F. J. Harkins, United States Columns Co., Boston, Mass.
 Frank J. M. Silha, Chicago.
 Charles A. Bates, C. H. Little Co., Detroit, Mich.
 Charles Helchen, C. H. Little Co., Detroit, Mich.
 E. K. Cormack, Wisconsin Lime & Cement Co., Chicago.
 R. D. Hissnette, New Aetna Portland Cement Co., Detroit, Mich.
 John M. Ferry, Ferry Supply Co., Pittsburg, Pa.
 C. A. Kimball, Atlas Portland Cement Co., New York City.
 W. B. Tracey, Atlas Portland Cement Co., Chicago.
 Joseph Mitchell, McLaughlin Building Material Co., Chicago.
 E. B. Cheney, McLaughlin Building Material Co., Chicago.
 W. A. Collings, Builders' Material Supply Co., 301 Scarritt Bldg., Kansas City, Mo.
 Fred K. Irvine, Rock Products, Chicago, Ill.
 D. S. Hoover, American Sewer Pipe Co., Akron, Ohio.
 Paul C. Smith, Atlas Portland Cement Co., Corn Exchange Bldg., Chicago, Ill.
 Walter Smith, The Atlas Portland Cement Co., Fort Dodge, Iowa.
 L. E. Armstrong, Plymouth Gypsum Co., Ft. Dodge, Ia.
 John Aldridge, John Aldridge & Son, Builders, Toronto, Ont.
 John F. Cronin, Mather Bros. Co., Richmond, Ind.
 Walter C. Schulz, Chas. S. Schulz & Son, Hoboken, N. J.
 A. F. Hinners, Hinners' Lime Co., Milwaukee, Wis.
 Geo. H. Gengnagel, Chas. H. Gengnagel, Dayton, O.
 R. E. Boomer, Michigan Builders' Supply Co., Detroit, Mich.
 M. A. Knight, Mgr., A. J. Weeks Co., Akron, Ohio.
 Henry Schaefer, Jr., M. A. Reeb, Buffalo, N. Y.
 M. A. Reeb, Niagara Gypsum Co., Buffalo, N. Y.
 Elihu Harpham, Buckeye Sewer Pipe Co., Akron, Ohio.
 W. T. Hewlett, Louisville Cement Co., Indianapolis, Ind.
 Chas. H. Claiborne, Union Mining Co., Mount Savage Fire Brick, Mt. Savage, Md., Baltimore, Md.
 W. M. Hodges, Pearl Clay Products Co., Kittanning Clay Products Co., Tuna Valley Pressed Brick Co., Bradford, Pa.
 H. M. Hill, W. H. Hill Lime & Cement Co., East St. Louis, Ill.
 G. F. Ahlbrandt, American Rolling Mill Co., Middletown, Ohio.
 Geo. L. Sheets, American Rolling Mill Co., Middletown, Ohio.
 D. C. Mannan, Mannan-Smith Supply Co., St. Joseph, Mo.
 S. H. Morman, S. H. Morman Co., Grand Rapids, Mich.
 C. B. Samuel, The Lookout Paint Mfg. Co., Chattanooga, Tenn.
 G. H. Atherton Manufacturing & Supply Co., Boyne City, Mich.
 J. F. Haggerty, The Beaver Co., Buffalo, N. Y.
 C. F. Towne, Niagara Gypsum Co., Buffalo, N. Y.
 H. C. Searce, Retail Lumber Dealers' Association, Mooreville, Ind.
 Albert Greeley, Greeley Lumber Co., Muncie, Ind.
 A. R. Rutledge, The Bartlett Co., Detroit and Jackson, Mich.
 W. A. Hay, Cleveland Bldg. Sup. Co., Cleveland, Ohio.
 James W. Landrum, Terre Haute Coal & Lime Co., Terre Haute, Ind.
 Louis G. Powell, The Roll Mfg. Co., Cleveland, Ohio.
 J. M. James, Grand Rapids Plaster Co., Evanston, Ill.
 J. H. Allen, Nebraska Material Co., 120 N. 12th St., Lincoln, Neb.
 W. E. Cobean, Wolverine Portland Cement Co., Coldwater, Mich.
 Dan W. Lovejoy, A. B. Meyer & Co., Indianapolis, Ind.
 W. A. Jordan, Charles Warner Co., Wilmington, Del.
 Charles Warner, Charles Warner Co., Wilmington, Del.
 Gordon Willis, Hunkin-Willis Lime & Cement Co., St. Louis, Mo.
 Chas. O. Bye, Charles Warner Co., Wilmington, Del.
 E. J. Holway, The Youngstown Ice Co., Youngstown, O.
 John A. Kling, 806 Hippodrome Bldg., Cleveland, Ohio.
 J. B. Blanton, J. B. Blanton Co., Frankfort, Ky.
 C. M. Foster, Meacham & Wright Co., Chicago, Ill.
 E. S. Healey, Glencoe Lime & Cement Co., St. Louis, Mo.
 R. H. Hughes, Crescent Portland Cement Co., Wampum, Pa.
 Frank Steeg, Acme Cement Plaster Co., St. Louis, Mo.
 Frank F. Malott, The Malott Coal & Lime Co., Indianapolis, Ind.
 Henry Angel, Cleveland Builders' Supply Co., Cleveland, Ohio.
 E. M. Dickerson, Acme Cement Plaster Co., St. Louis, Mo.
 Theo. C. Schwier, Ed. M. Baltes & Co., Fort Wayne, Ind.
 Frederick S. Beard, Standard Builders' Supply Co., Indianapolis, Ind.
 P. Weigering, Defiance, Ohio.
 E. H. Moellering, W. Moellering's Sons, Ft. Wayne, Ind.
 T. W. Murray, Trussed Concrete Steel Co., Detroit, Mich.
 S. H. Beard, U. S. Gypsum Co., Detroit, Mich.
 Chas. A. Glore, Centralia, Ill.
 M. S. Blakely, C. A. Glore, Centralia, Ill.
 H. K. Lackland, Laclede-Christy Clay Products Co., St. Louis, Mo.
 Wm. H. Pipkorn, W. H. Pipkorn Co., Milwaukee, Wis.
 C. H. Wilson, The Cincinnati Sewer Pipe Co., Cincinnati, Ohio.
 Jas. G. Chrispin, The Jas. G. Chrispin Lime & Cement Co., Cincinnati, Ohio.
 Samuel Siddall, The Garry Iron & Steel Co., Niles, Ohio.
 Marion M. Allen, Newport, Ky.
 H. B. McMaster, Commissioner Associated Metal Lath Manufacturers, Youngstown, Ohio.
 Geo. W. McCammon, L. H. McCammon, Cincinnati, O.
 Jas. C. Denholm, Denholm & Co., 622 E. McMillan St., Cincinnati, Ohio.
 J. B. Paul, Ironton Portland Cement Co., Ironton, Ohio.
 J. G. Tucker, Chattanooga Paint Co., Chattanooga, Tenn.
 Ed. McGrady, McGrady Bros. Co., Braddock, Pa.
 H. C. McGrady, McGrady Bros. Co., Braddock, Pa.
 J. G. H. Lampadius, C. H. Londelius Sons Co., Peoria and 63rd St., Chicago.
 Theo. E. Flescher, Sheboygan Lime Wks., Sheboygan, Wis.
 Philip S. Barnes, Rock Products, 355 Dearborn St., Chicago, Ill.
 M. F. McGrath, American Gypsum Co., Detroit, Mich.
 H. A. White, Geo. E. White, Windsor, Ont., Can.
 H. F. Rowse, The Robinson Clay Products Co., Akron, Ohio.
 John W. Eichelberger, T. D. Eichelberger's Sons, Dayton, Ohio.
 E. A. Foster, Samuel Cabot, Inc., Boston, Mass.
 W. W. Nichol, Peoria Fuel Co., Peoria, Ill.
 Wm. C. Crolius, McLaughlin Building Material Co., Chicago, Ill.
 O. C. Maurer, Woodville Lime & Cement Co., Toledo, Ohio.
 H. H. Parsons, Parsons Lbr. Co., Rockford, Ill.
 E. H. Michel, Salmen Brick & Lbr. Co., Ltd., New Orleans, La.
 S. J. Briswanger, Toch Brothers, 320 5th Ave., New York City.
 Hector M. Gordon, Wadsworth, Howland & Co., Inc., Boston, Mass.
 J. C. Van Doorn, Universal Portland Cement Co., Minneapolis, Minn.
 Harry Jennings, 105 Cottingham St., Toronto, Ont.
 H. E. Grimm, Edgar Allen Co., 1404 McCormick Bldg., Chicago, Ill.
 Edward Gearing, Toronto, Ont.
 John Robertson, 315 Palmerston Boul., Toronto, Ont.
 W. W. Fischer, Fischer Lime & Cement Co., Memphis, Tenn.
 James N. Thayer, O. C. Thayer & Son, Erie, Pa.
 Geo. A. Dascomb, Alamo Lumber Co., P. O. Box 525, Chicago, Ill.
 H. C. Steeg, Reiman & Steeg Co., Terre Haute, Ind.
 Chas. J. Parrott, McLaughlin Building Material Co., 145 La Salle St., Chicago, Ill.
 T. L. Williamson, Dewey Portland Cement Co., Kansas City, Mo.
 Felix Oppenheimer, The Atlas M. & M. Co., Lincoln, N. J.
 J. L. Hirschman, Trussed Concrete Steel Co., Detroit, Mich.
 L. E. Fishack, The Fishack Gypsum Co., Toledo, Ohio.
 Roger Titus, The Best Bros. Keene's Cement Co., Medicine Lodge, Kans.
 F. R. Clarke, General Fireproofing Co., Youngstown, O.
 H. H. Plummer, Menasha, Wis.
 P. Austen Tones, Atlas Portland Cement Co., New York City.
 L. A. Hilligoss, Hilligoss & Son, Shelbyville, Ind.
 W. McMaster White, Standard Builders' Supply Co., Indianapolis, Ind.
 Harvey S. Thompson, Fairview Coal & Supply Co., Detroit, Mich.
 J. H. McCrady, McCrady Bros. Co., Braddock, Pa.
 E. F. Knight, Bradford Pressed Brick Co., Bradford, Pa.
 H. F. Rauch, Superior Portland Cement Co., Cincinnati, Ohio.
 C. F. Harwood, Superior Portland Cement Co., Cincinnati, Ohio.
 H. H. Halliday, Cairo, Ill.
 W. W. Macatee, W. L. Macatee & Sons, Houston, Texas.
 W. W. Coney, The Moores-Coney Co., Cincinnati, Ohio.
 L. M. Mummert, Indianapolis, Ind.
 Chester L. & Harry C. Houghten, H. Houghten & Sons, Detroit, Mich.
 F. R. Dickinson, H. H. Dickinson Co., 42, Detroit, Mich.
 R. M. Meyer, River Rouge, Mich.
 Charles S. Waldo, Waldo Brothers, 102 Milk St., Boston, Mass.
 S. B. Goucher, National Fireproofing Co., Pittsburg, Pa.
 Edw. D. Boyer, Atlas Portland Cement Co., New York City.
 L. P. Baier, Acme Cement Plaster Co., St. Louis, Mo.
 Ambrose Tomkins, Tomkins Brothers, Newark, N. J.
 P. J. Johnson, Johnson A. Denies Sons Co., Memphis, Tenn.
 A. J. Mueller, John Mueller, Lockland, Ohio.
 W. C. Lantry, Western Lime & Cement Co., Milwaukee, Wis.
 D. Richter, Alpha Portland Cement Co., Easton, Pa.
 J. F. Williams, Hecia Cement Co., Detroit, Mich.
 Mrs. Jas. W. Wardrop, Pittsburg, Pa.
 A. H. Rulkoetter, Universal Portland Cement Co., Minneapolis, Minn.
 Horace G. Kimble, Kent Mill Co., 170 Broadway, New York, N. Y.
 J. E. Graham, American Lime Co., Chicago, Ill.
 B. L. McNulty, American Lime Co., Chicago, Ill.
 C. B. Elwood, Ohio & Western Lime Co., Huntington, Ind.
 E. S. Cheaney, Illinois Lumber & Supply Dealers' Association, Petersburg, Ill.
 G. M. Eilenberger, Plymouth Gypsum Co., Ft. Dodge, Iowa.
 J. T. Healy, Jr., Atlas Portland Cement Co., 206 La Salle street, Chicago, Ill.
 A. J. Armstrong, Plymouth Gypsum Co., Ft. Dodge, Iowa.
 R. T. Spencer, Spencer Bros., 172 Washington street, Chicago, Ill.

E. D. Logsdon, People's Coal & Cement Co., Indianapolis, Ind.
 F. M. Clutter, "Dealers' Record," Chicago, Ill.
 John A. George, Indianapolis Coal Co., Indianapolis, Ind.
 J. J. Jerschel, Superior Supply Co., Woodville Lime & Cement Co., Toledo, Ohio.
 P. W. McMullen, Sunderland Bros. Co., Omaha, Neb.
 Walter L. Woods, Standard Material Co., Chicago, Ill.
 H. T. Gilbert, Sharon Steel Hoop Co., Chicago.
 S. V. Peppel, Chicago.
 H. N. Tolles, Sheldon School, Chicago.
 W. E. Viets, Lehigh Portland Cement Co., Cleveland, Ohio.
 A. S. Walton, Laclede-Christy Clay Products Co., St. Louis.
 F. W. Kermott, Bond & Sarnot Co., Milwaukee, Wis.
 F. W. Sarnott Co., Milwaukee, Wis.

POST MOLD MEN MEET.

The first meeting of the Cement Post Manufacturers' Association was held yesterday morning at 10 o'clock in the Annex. There was a good attendance and much interest was manifested by those present in the question of a permanent organization and in giving widespread publicity to the concrete post.

At this, the initial meeting, little was really accomplished except to get acquainted and make arrangements for another meeting at some future date, this date to be decided later. M. A. Malloy, of the University of Illinois, presided over the meeting and brought out the fact that the concrete post manufacturers should get together and tell each other things, thus giving benefit to the ones without a long experience. At the first some of the men in attendance objected to giving and receiving information, but they were finally brought around to the majority's point of view. It was decided at the meeting that when the next one is held several papers will be read by prominent men connected with the concrete post industry and men who are thoroughly familiar with their subjects.

Among those firms represented at the meeting yesterday were The D. & A. Post Mold Company, The Fence Supply Manufacturing Company, The Everlasting Fence Post Company, The Ohio Post Mold Company, The Wisconsin Sand & Gravel Company, The Luck Cement Post Mold Company, Somers Bros.

Those there declared themselves in favor of organization and publicity and action will probably be taken at an early date.

CONCRETE OBELISK TO BE ERECTED.

Several of the exhibitors at the Show yesterday were preparing to arrange plans to erect a monument in reinforced concrete on the site of the neglected grave of Joseph Aspdin, of Wakefield, England, the inventor of Portland cement. The men interested said the concrete monument was to be fashioned after the famous Cleopatra's Needle, in Central Park, New York.

The cement men said they would guarantee that the obelisk, as they choose to term it, will be as permanent as the pyramids, and that 2,500 years from this day it will be as perfect as it will be on the day of erection. Of course, these men do not believe anyone will doubt their word enough to want to wait such a long time for results, but it will still be in existence.

The idea is to make the monument as nearly resemble the Egyptian obelisk as possible and to carry out this idea further, the inscription on it will be carved in both English and Egyptian. No one is expected to read the Egyptian, but it will be there.

LEHIGH COMES TO CHICAGO

The Lehigh Portland Cement Company has taken the entire fifth floor of the People's Gas, Light & Coke Company Building to accommodate its western sales office. A consolidation of the Cleveland and Indianapolis offices will be effected as soon as practicable, and the removal to Chicago effected. Frederick E. Paulson will be general manager of the western sales department. Colonel Viets will be in charge of accounting and financial matters. Vice-President A. Y. Gowan will give part of his time to the affairs of the Chicago office.

CONCRETE BLOCK HOTEL.

Dunkirk, N. Y., Feb. 21.—Ernest E. Elkins, of the Dunkirk Concrete Stone Company, is in Florida, looking after the matter of building a big concrete block hotel. With New York parties he is planning the erection of a handsome, up-to-date hotel.

In the event that their plans materialize, Mr. Elkins will move a portion of the machinery of the local plant to that state, where he will manufacture the concrete blocks for building the hotel. At present Mr. Elkins is in Jacksonville, Fla.

MUNICIPAL ENGINEERS MEET.

The Illinois Association of Municipal Contractors held its fourth annual meeting at the LaSalle Hotel February 20 and 21. The objects of this association, as stated in the forepart of its constitution, are as follows:

"To promote, encourage and facilitate the making of public improvements.

"To secure a higher degree of accuracy in the legally prescribed procedure and proceedings.

"To collectively bear the expense incident to the making of abstracts of legal proceedings and the examination thereof.

"To stimulate the market and the demand for improved improvement bonds and protect the contractors against unwarranted exactions and unreasonable discounts.

"To secure better specifications for public improvements, a greater uniformity in the specifications and, where practicable, a classification of the various branches of public work.

"To improve the quality, quantity and efficiency of public improvements.

"To eliminate from specifications for public work conditions which are onerous to the contractor and wasteful to the public.

"To secure at the hands of public officers equitable treatment and better and more just consideration.

"To cultivate a closer tie of fraternalism among contractors.

"To improve and relieve conditions and relations in which we have a common interest.

"To initiate, promote and encourage the enactment of legislation tending to carry out the objects of this association."

Monday, the 20th, the first session of this fourth annual meeting was held, and the regular order of business was the procedure of the day. Yesterday the following program was carried out:

Objects and Benefits of the Association, P. F. McCarthy.

Marketability of Special Assessment Bonds, A. H. Baer.

Cost Accounting, A. W. Eisenmayer.

The Contractor and His Bonds, L. W. Johnson.

Finances of the Association, A. F. Franks.

Fraternalism Among Contractors, O. T. Dunlap.

The address of Mr. McCarthy on Objects and Benefits of the Association was one of the big features of the convention and will be printed by the association and a copy sent to each member of all the local boards of improvement in the state of Illinois.

Mr. Baer's address on the subject of Marketability of Special Assessment Bonds was also most highly spoken of, as Mr. Baer has had many years' experience along this line and is an expert on this kind of work. The association ordered this to be published in pamphlet form, and a copy will be sent to every banker in the state.

The election of officers yesterday resulted as follows:

A. E. Rutledge, Rockford, Ill., president.

S. A. Tuttle, Decatur, Ill., first vice-president.

Thomas Keys, LaSalle, Ill., second vice-president.

J. P. Keeley, East St. Louis, Ill., third vice-president.

J. A. Meyer, Belleville, Ill., fourth vice-president.

I. D. Lane, of Bloomington, Ill., was re-elected

secretary and treasurer, and C. E. Mateer, Chicago, was again engaged as the executive secretary for the year 1911.

Last night a banquet was held in the German Grille Room of the LaSalle Hotel and a very elaborate menu was served. The following members of the association and their friends attended this banquet:

H. C. Farley, Mayor, Hoopeston, Ill.
 Edward L. Middleton, Streator, Ill.
 A. D. Thompson, Peoria, Ill.
 L. L. Harper, Bellevue, Ill.
 Wm. Howe, Galesburg, Ill.
 F. L. Kinney, Chicago.
 A. W. Eisenmayer, Granite City, Ill.
 W. H. Hill, Murphysboro Paving Brick Co., Murphysboro, Ill.
 E. R. Harding, Racine, Wis.
 A. E. Rutledge, Rockford, Ill.
 S. A. Tuttle, Decatur, Ill.
 J. P. Keeley, East St. Louis, Ill.
 J. A. Meyer, Belleville, Ill.
 J. D. Lane, Bloomington, Ill.
 Chas. E. Mateer, Chicago.
 Wm. Green, Chicago.
 J. A. Moran, Davenport, Ia.
 W. D. Walsh, St. Louis, Mo.
 O. T. Dunlap, Edwardsville, Ill.
 A. T. Franks, Jacksonville, Ill.
 E. M. Henderson, Jacksonville, Ill.
 Maurice Hoeftken, Belleville, Ill.
 P. F. McCarthy.
 B. L. Sweet, Indianapolis, Ind.
 R. A. Lavill, Canton, Ill.
 Grant C. Osborn, Chicago.
 R. Cordie, Alton, Ill.
 Allen Fay Partrish, Paris, Ill.
 F. H. Rohn, Chicago.
 John M. Heckard, Canton, Ill.
 John W. McKee, Burlington, Ia.
 J. B. McAnley, Galesburg, Ill.
 F. J. Rilling, Burlington, Ill.
 Joseph Orr, Chicago Heights, Ill.
 Fred J. Deutsche, New York, N. Y.
 Edw. M. Lang, Highland Park, Ill.
 J. F. McGuirk, Chicago.
 Thos. W. Kelly, Chicago.

UNUSUALLY HARD CONCRETE FOR STAIR BUILDING.

A new concrete for stairs in public places contains carborundum, which has a hardness almost equal to the diamond. Under the incessant tread of city crowds even granite becomes smoothed and worn.

In a test at Paris, stairs of the carborundum concrete have shown no perceptible wear after an estimated traffic of more than 14,000,000 persons.

The Chemical Floor & Tile Company, of St. Louis, has been incorporated. The capital stock is \$150,000.00. The incorporators are Daniel F. Ross, Sr., Daniel F. Ross, Jr., and Edward P. Weilms.

The Hanna-Hickey Bros. Construction Company, of St. Louis, has been incorporated. The capital stock is \$50,000.00. The incorporators are P. J. Hanna, John P. Hickey, D. P. Hickey and others.

Frank Houghton, a Detroit, Mich., dealer, started the ball rolling to secure the next convention of the N. B. S. A. for that city. White streamer ribbons bearing the words "Detroit, 1912," were passed around and the lobby of the Annex was full of white ribbons yesterday.



INTERSTATE CEMENT TILE MANUFACTURERS IN CONVENTION IN CHICAGO.

CANADIAN CEMENT SHOW

To Rival America's Foremost Show in Equipment.—
To Be Held at Toronto, March 6-11.

During the past two years the Canadian Cement and Concrete Association has managed two cement shows and conventions. The third annual show to be held under their auspices will be held at Toronto, Canada, in the St. Lawrence arena, March 6-11. While the two previous shows were great successes, in spite of the fact that as much interest in them was not manifested as in the shows here in this country, they can be said to have paved the way for this third show, and to have taken from the path any obstacle which may have influenced the successful outcome.

When compared with the preparations made previous to the other two shows, the plans being formulated for this one are astounding in their magnitude. The fact is, however, that the people of Canada are promising to give their loyal support to this show and make it one that can be ranked with the best.

At this early date the majority of exhibition spaces have been allotted.

Many new inventions will be on exhibition at this show; some of these will have been seen at the New York and Chicago shows, but there will be several novel features entered for the first time here. Toronto will not be backward in providing music, either; one of the best local orchestras there will play during all sessions of the show. Various prominent speakers will address the meeting or read papers, and the otherwise interesting program arranged by the committee will be a great factor in the success of the show. Concrete engineering subjects will comprise the topics for some of the papers, and others will be on the development of the cement industry.

Inquiries relating to space, rates, etc., should be addressed to the secretary, William Snaith, 57 Adelaide Street, Toronto, Canada.

NEW JERSEY.

Mason Material Dealers Will Hold Their Annual Meeting at the Manhattan Hotel March 9th.

The Mason Material Dealers' Association of New Jersey will hold their annual meeting at the Manhattan Hotel, New York City, March 9th. Walter C. Schultz is the president of this association, and James M. Reilly, secretary. This association has probably done more to build up the builders' supply business in the state of New Jersey during the time that it has been in existence than any other cause. Their meetings are always well attended, practically every retailer of any consequence in the state being a member. It is a real live organization working in harmony for a common purpose and achieving results little short of remarkable.

It is regrettable that the retailers of builders' supplies all over the United States could not be present at one of their sessions so as to see the methods employed and the results that are accomplished. The program has not been issued as yet, but Secretary Reilly says that it will be an interesting and instructive one as usual. The banquet which is held in the evening is a happy feature and has been the means of bringing together the manufacturers, wholesalers and retailers in a friendly and harmonious relationship. Several prominent speakers will be on hand, and this feature of the meeting bids fair to be as usual, one of the most enjoyable events for the New Jersey retailers.

WEST COAST RETAILERS.

San Francisco, Cal., Feb. 15.—Retail business in building materials has been quiet for the last month all over the Coast. Dealers as a rule are carrying light stocks, and do not expect much improvement for the next few weeks, though in San Francisco the outlook is good. January, however, has been a month of rain, and there have been very few days when any outside work, either on buildings, sewers or streets, has been possible. There has nevertheless been more business in most localities than a year ago, as many buildings are under construction, and there has been a great deal of other work which had to be rushed along as fast as possible.

In San Francisco permits were issued last month for buildings valued at \$1,750,841.00, showing quite an improvement over December, and a gain of over half a million over January, last year. Such an increase at this time of year is regarded as a great encouragement, and it is believed that the beginning of a period of renewed activity is at hand. The most encouraging feature is the decision of

Congress in favor of San Francisco as the location for the Panama-Pacific Exposition. This event itself will require the erection of many large buildings, in which concrete and various forms of plaster products will be the principal materials used, the idea being to make as many of them as possible a permanent ornament to the city. While no definite steps have been taken toward the erection of these buildings, arrangements will be made as soon as possible for the plans. In addition to this, a large number of business houses, manufacturing concerns, and owners of hotel sites have had plans drawn, to be carried out as soon as the exposition was assured, and the letting of contracts on this work will begin as soon as the weather will permit construction work.

The exposition is also expected to have a good effect on the business in other Coast towns, particularly those around San Francisco, and in Oakland, across the bay, plans are under way for a large amount of building, as well as many municipal improvements. The town of San Diego, Cal., will hold a fair of its own in 1915, and has already engaged architects to lay out the grounds and buildings. The activity in southern California is indicated by the January building record of Los Angeles, which amounted to over \$2,100,000. The best previous January in that city was in 1903, when the total was less than \$2,000,000.

LOUISVILLE RETAILERS.

Louisville, Ky., Feb. 16.—A lot of big buildings are definitely in prospect here. Among them is the new city hospital, for which a bond issue of \$1,000,000.00 was authorized last November. D. X. Murphy & Bro. have been commissioned to draw the plans. They have designed some important buildings in this city and their ability in connection with the present work is unquestioned.

The new Y. M. C. A. building, which will cost \$350,000.00, is another which will take a lot of material. McDonald & Dodd have been commissioned as architects. John P. Starks is planning the erection of a big office building on the present site of the First Christian Church, which will be demolished as soon as the new building is completed. Still another building of note which is being discussed is a 12-story hotel planned by Sam P. Jones and associates for Walnut street between Fourth and Fifth. A well known hotel man of Chattanooga, Tenn., has agreed to lease it for twenty-five years, and it is expected that the final details will be decided upon within the next few weeks. The structure is expected to cost \$750,000.00.

The Weissinger-Gaulbert annex, a 10-story apartment building, is to be erected at Third avenue and Broadway, although the contract for this has not yet been let. In this connection an interesting point has arisen which has been productive of considerable discussion. The Legislature during the session of 1910 passed a law which was intended to provide for sanitary construction in connection with tenement houses. The bill also included apartments in its scope, although this was not done intentionally. Some of the provisions of the measure are impossible to observe in the building of an apartment house, such as the requirement for a certain space to be devoted to a back yard, depending upon the size of the building.

In order to show that this part of the law is not to be applied to first class apartment houses, steps are being taken to have a test case acted on by the local courts, as the building inspector has refused to issue a permit for the construction of the Weissinger-Gaulbert Building until this point is settled.

The effects of the tenement house law are given much of the blame for the falling off in building as shown by the reports of the inspector for January.

In view of the numerous buildings of importance which are to be erected here within the near future, the Builders' Exchange of Louisville has adopted a resolution calling on the Hospital Commission, among others, to award contracts to Louisville concerns wherever possible. It is the belief that home talent will be favored, other conditions being equal. The Builders' Exchange held its annual election recently, the old officers being chosen to serve for the ensuing year. E. G. Heartick is president and J. M. Vollmer secretary of the organization.

A subject taken up at the annual convention of the state retail lumbermen in this city this month was of interest to the building supply men. It was that of the mechanics' lien law. The present measure was made effective at the last meeting of the State Legislature, and has been far from satisfactory, one of the provisions requiring that notice of intention to exercise the lien must be given within 24 hours after the delivery of the material. This is obviously impracticable, and it is understood that at the next session the Legis-

lature will be called upon to alter the measure radically.

Edward Streicher, head of the National Roofing & Supply Company, is in New York resting up in preparation for the strenuous work which is in prospect within the next few months. While trade at present is quiet with the firm, the prospects are excellent.

S. F. Troxell reported the roofing situation quiet, but added that a lot of work is being figured on. Not only is much new work in sight, but repair jobs are piling up in an imposing way. It is expected that active operations will begin by next month.

Those in the building supply trade in Louisville have learned with regret of the condition of F. R. Burrell, of Burrell & Walker, dealers in drain pipe, tile and other clay products. Mr. Burrell recently sustained a stroke of paralysis and has since been confined to his home. While his condition is improved he is not yet out of danger.

TO PREVENT DUSTING OR EASY ABRASION OF IMPROPERLY LAID CONCRETE FLOORS.

By Albert Moyer, Assoc. Am. Soc. C. E.

Cement floors, particularly in office buildings or warehouses, which do not have the advantage of obtaining the necessary moisture from the atmosphere such as outside floors and sidewalks on which the dew falls at night, if not properly protected and kept damp, become prematurely dry and are, therefore, more or less porous and weak, causing easy abrasion under foot traffic, or what is commonly known as dusting.

Care should be exercised in keeping such floors damp by covering with wet sand, wet hay or straw, for a week or more, until the floor has properly hardened. If this has not been done and the floors are found to dust under foot traffic, the following remedy will be found very easy to accomplish, economical and effective:

Wash the floor thoroughly with clean water, scrubbing with a stiff broom or scrubbing brush, removing all dirt and loose particles. Allow the surface to dry and as soon as dry apply a solution of one part water-glass (sodium silicate) of 40 degrees Baume and 3 to 4 parts of water, the proportion of water depending upon the porosity of the concrete. The denser the concrete the weaker the solution required. Stir well and apply this mixture with a brush (a large whitewash brush with long handle will be found the most economical). Do not mix a greater quantity than you can use in an hour.

If this solution is sufficiently thin, it will penetrate the pores of the concrete. Allow the concrete surface thus treated to dry. As soon as dry, wash off with clean water, using a mop. Again allow surface to dry and apply the solution as before. Allow to dry and again wash off with clean water, using a mop. As soon as the surface is again dry, apply the solution as before. If the third coat does not flush to the surface, apply another coat as above.

The sodium silicate which remains on the surface, not having come in contact with the other alkalies in the concrete, is readily soluble in water and can, therefore, be easily washed off, thus evening up the color and texture of the floor. That which has penetrated into the pores, having come in contact with the other alkalies in the concrete, has formed into an insoluble and very hard material, hardening the surface, preventing dusting and adding materially to the wearing value of the floor.

A. Wedenborg came all the way from Helena, Ark., to see if there might be anything new in the way of concrete machinery that he did not already know about. Mr. Wedenborg was born in Holland. He received a thorough engineering education, both in the Old Country and in America, coming across the Atlantic at the age of 22 years. He is now a successful general contractor at Helena, Ark., and says he is proud to have it known that he is a subscriber to Rock Products.

Frank P. Ladd, a well known retail monument dealer at Kewanee, Ill., and secretary of the Illinois Association of Retail Monument Dealers, was our guest yesterday. Mr. Ladd does some concrete work, particularly in the line of burial vaults.

The Marblehead Lime Company staff was out in force the other day and explored every corner at the Coliseum. They were A. T. Howe, D. Hour, L. P. Black and C. E. Marvin.

W. Gano, of the sales department of the Universal Portland Cement Co., at Pittsburg, and wife are enjoying the lively times at the Cement Show.

FINDING

Of the Commission Which Investigated the Henke Building Collapse Made Public— The Blame Placed Where It Belongs.

In the issue of December 22 we printed a story of the collapse of the Henke Building at Cleveland, Ohio, which happened on November 22 and in which several people were killed and injured.

The city of Cleveland appointed a commission, consisting of two engineers, two architects and two practical building contractors, to investigate the disaster with a view of determining the exact cause which led up to it.

The investigation committee consisted of W. G. Henderer and B. L. Leffler, representing the Cleveland Engineering Society; Herbert B. Briggs and Victor E. Thebaud, representing the Cleveland Chapter of the American Institute of Architects, and James R. Gloyd and J. C. Skeel, two practical building contractors, who have erected many concrete structures. These men acted with F. G. Hogen, Director of Public Safety, of Cleveland.

The results of their finding are as follows:

EXCERPTS FROM REPORT.

The building, which replaced a building destroyed by fire May 12th, 1910, extended along Lorain Ave. 103 feet, along West 30th Street 90 feet, and contained a basement and four stories. The original drawings called for a wall-bearing building of mill construction, but alternative tenders were received for reinforced concrete construction, and the contract was awarded for the latter, the type adopted being a wall-bearing structure with the conventional reinforced concrete column, girder, rib and tile floor, with slab cast monolithic with girder.

Portions of the basement walls, the smoke stack, the west wall to level of the third floor and the show window lintel girders of the burned building were retained in the new construction. The new footings of walls and columns were of plain concrete.

The Lorain Avenue and West 30th Street fronts of the building were faced with sandstone and shale brick. The inside of exterior walls was faced with new hollow brick and all other parts up to the fourth floor were built of brick taken from the burned building. The fourth story and parapet walls were built of new brick. The building was to be used as a furniture store and was owned by H. A. Henke. The architects were Searies, Hirsch and Gavin, and the contractor was The Forest City Construction Company.

The contract was signed July 25, 1910; included all trades except plumbing, heating and electrical work; provided for the completion by November 10, 1910, and contained a bonus and damage clause of \$10.00 per day for completion before or after the latter date. Work was commenced July 28, 1910, and the building permit issued August 11, 1910. The rate and progress of construction and weather conditions are shown on the accompanying tabulated statement, marked Exhibit B.

From the evidence submitted it appears that the collapse occurred at about 7:15 P. M., Tuesday, November 22, 1910, and that the time elapsing between the initial failure and the wrecking of the building did not exceed one minute. The collapse was complete and practically instantaneous.

While no fatalities occurred in the Henke Building, the upper portion of the west wall fell on and crushed the adjoining building occupied as a store and living apartment, resulting in loss of life and injury to the occupants.

It is the belief of your commission that the initial failure was due to the premature removal of forms and supports in the third story, as from the testimony of eye witnesses and other evidence, the initial failure presumably occurred (1) in the east section of the fourth floor, or (2) in one or more of the third story columns, or (3) a combination of both.

The weather reports show very unfavorable conditions during the construction of the third and fourth story columns and the fourth floor and roof slabs, and in view of the short time the third story columns and fourth floor had been in place, the concrete had not developed sufficient strength to carry the roof and roof forms as a dead load when these third story forms and supports were removed.

In fixing the cause of and the responsibility for the collapse of the Henke Building, your commission believes it well to name the parties engaged in the design and construction of the building, and to consider the relation and responsibility of each party to the collapse. The parties are: the architects, the contractor, the owner, and the Department of Buildings of the City of Cleveland.

In considering each party it is well to remember that the negligence of any one may be a contributory cause to the collapse. The following data covers, in the opinion of your commission, the primary causes of the collapse.

Causes of Collapse.

It is the belief of your commission that the architects were negligent in the following respects:

1st. Although the evidence shows that the architects advised and requested the owner to place a special reinforced concrete inspector on the work during the progress of the construction, they did not specifically call the owner's attention to Section 473 of the Building Code, which by mandatory requirement provides that the owner shall place such an inspector on the work.

2nd. The architects did not name in the application for the building permit a special inspector—as required by Section 473—who was to be continually on the work during the placing of concrete and steel. Assuming the architects to be experts in building construction and acquainted with the provisions of the Building Code, they should have caused the owner to name an acceptable special inspector and co-operated with the Department of Buildings in the enforcement of this section.

3rd. The architects did not give adequate consideration to the removal of the forms for the concrete work. They evidently gave little attention to weather condi-

tions from October 22nd to November 22nd inclusive when, according to the United States Weather Reports, there were sixteen (16) days in which the temperature was at or below 35 degrees—on nine (9) of which the temperature was 32 degrees or below—with a minimum of 25 degrees; and during which time there were only four (4) clear days with fifteen (15) days of rain or snow. Under these weather conditions more than ordinary precautions should have been taken in the removal of forms.

4th. The architects did not give adequate consideration to the sand used in the building. The specifications called for washed sand, while unwashed sand, not of uniform quality, was used.

5th. The architects did not exercise proper judgment in advising the owner in regard to the rapidity with which the work could be safely prosecuted. The testimony shows that the work was hurried from the beginning.

In view of the foregoing points of neglected duty it is the opinion of your commission that the architectural supervision was deficient.

It is the opinion of your commission that the contractor upon signing the contract assumed the responsibility of executing the work in accordance with the plans and specifications, and any deviation from them should have been made only upon order of the architects; but that the contractor should not be held responsible for errors of design.

It is the belief of your commission, based upon the evidence submitted and investigation of ruins, that the contractor was negligent in the following particulars:

1st. The foremen employed on the building were ignorant of the requirements of the drawings and specifications; were ignorant of the proper methods of handling concrete for reinforced concrete work; did not know what kind of cement was being used; did not exercise proper care in the measurement and mixing of concrete aggregate and the placing of reinforcing steel; allowed brick work erection of forms to proceed upon green concrete; and conducted the work generally in a loose, slipshod and hurried manner.

2nd. The reinforcing steel was carelessly placed in ribs, girders and columns, and no provision was made to insure steel being in its proper position after concrete had been poured. The girder rods did not extend the proper distance beyond the column centers; girder shear rods and column hoops were improperly or insecurely placed; sleeves used for splicing column rods were of improper sizes, carelessly placed and not filled with mortar.

3rd. The structural members of concrete were not of proper sizes, concrete was of poor quality and not properly placed as shown by the following particulars:

(a) Whereas four (4") inch slab ribs were called for, many three (3") ribs were found.

(b) Several girders and slab ribs were found to be badly honeycombed.

(c) Broken specimens of concrete showed it was not of uniform quality.

(d) Due to work being done on green concrete the bond between concrete and steel was broken.

(e) Whereas the floor was to be reshoored, causing loss of mortar in the concrete of adjacent girders.

(f) In some cases sawdust was found in bases of columns.

4th. The sand used was, in many cases, of inferior quality, contained loam and clay and did not meet the specification requirements for washed sand.

5th. The cement delivered at the building was apparently twenty (20%) per cent less in amount than the amount necessary to properly construct the work in accordance with the specifications. See Exhibit D.

6th. The forms were usually removed without the consent of the architects in violation of the specification requirements.

In the east side of the third-story, forms, supporting the fourth floor, were removed in sixteen (16) days after the pouring of concrete, and the floor reshoored. The removal of these forms, in this short time, was, considering the weather conditions during the month of November extremely dangerous. This time would hardly have been sufficient under favorable weather conditions.

These forms were removed without the consent of and contrary to the instructions of the architects. Although braces ordinarily used in reshoring might have been sufficient under ordinary conditions, under the above noted conditions, the original forms and shores should have been left intact a much longer time; as, by removing the same, the slightest settlement in the floor would have tended to break the bond between the steel and concrete, thereby destroying the efficiency of the reinforced concrete.

It is the opinion of your commission that the removal or changing of these forms and shores was the one primary cause of the collapse.

In the opinion of your commission the owner was negligent in that he did not employ a special reinforced concrete inspector on the building as advised by the architects.

Department of Buildings.

Section 473 of the Building Code provides in part as follows:

"When any concrete wall or armored, reinforced trussed concrete is used in construction, the owner shall provide for the inspection of cement and inerts, as required by the Inspector of Buildings; he shall also provide a special inspector of the work who shall be satisfactory at all times to the Inspector of Buildings, and who shall be on the work continually during the mixing and the placing of concrete and steel. Such special inspector shall make daily reports to the Inspector of Buildings on the progress of the work.

"Before issuing a permit for the work, the owner shall name in writing, the special inspector, and such special inspector shall pass such examination as may be required by the Inspector of Buildings to determine his competency.

It is the opinion of your commission that this provision is mandatory and in view of the extreme importance of close, careful supervision and inspection of this class of construction, and in view of the fact that the cost of such service is at the expense of the owner, we do not believe the evidence shows any excuse whatever for the non-enforcement of this requirement and we believe the Inspector of Buildings was negligent in that he did not insist on the owner having a competent special reinforced concrete inspector on the building.

The evidence shows that the Inspector of Buildings, Engineer of Construction and the Masonry Inspector in that district were at the building enough times to have ascertained whether such special inspector was on the work or not; to say nothing of the fact that daily reports were not being made to the Inspector of Buildings by such special inspector.

In view of the evidence submitted and data obtained

your commission is of the opinion that the enforcement of Section 473 of the Building Code is not only practicable, but that it would be of assistance to the Inspector of Buildings in the supervision of reinforced concrete work, especially as this assistance and service would be without expense to the city.

Contributory Causes.

In addition to the foregoing the investigations of your commission show carelessness in the design and construction of the building in a number of instances which undoubtedly contributed to the complete and instantaneous collapse of it, as indicated, in part, by the following: effect of thrust of fourth story arches; use of excessive number of brick bats or half brick; use of thick mortar joints and soft brick; eccentric loading of piers supporting show window lintels; and inadequate support for south end of West 30th Street show window lintel—evidence shows that this support was changed during construction from a steel channel column to a brick pier. Much of the brick mortar was poor; some of the lime was not thoroughly slaked; some of the mortar was mixed and built into walls while hot from the slaking of lime, thereby destroying the value of the cement; and unwashed sand containing loam and clay was used.

EXPLOSION THEORY.

After a thorough investigation your commission is of the opinion that the disaster was not caused by an explosion.

The testimony shows that sand has been taken from near column footings, but it is the opinion of your commission based upon its investigation, that the collapse was not caused by the shifting or settlement of the column footings.

REINFORCED CONCRETE DESIGN.

From the evidence submitted your commission is satisfied that the reinforced concrete design was a safe one.

CONSTRUCTION CHANGES.

Section 219 of the Building Code provides in part that—"If during the progress of the execution of such work (referring to construction after building permit is issued) it is desired to deviate in any manner affecting the construction or other essential of the building, from the terms of the application (for the building permit), plans or specifications, notice of such intention to alter, or deviate, shall be given in writing to the Inspector of Buildings and his written assent be obtained before such alterations or deviation may be made. If such change or deviation affects the bearing or structural parts of such building, or its classification or grade of occupancy, new plans thereof shall be submitted to the Inspector of Buildings for approval."

The testimony shows that several changes were made in the construction as the building progressed, which were not reported to the Department of Buildings either by the architects or the inspectors from the Department.

In the opinion of your commission some of these changes improved the construction and others weakened it. Your commission believes, in all matters affecting the structural features of a building, architects and department inspectors should implicitly comply with the provisions of Section 219 of the Code.

CONCRETE CONSTRUCTION.

Your commission finds, from its investigation, no reason to condemn the use of concrete in combination with steel for the structural parts of buildings, provided: the concrete is composed of proper materials, accurately measured and thoroughly mixed; the steel of sufficient strength and properly placed; the work installed by competent contractors and workmen; and the specifications, drawings and construction prepared and executed under the direction of competent designers and inspectors.

THE INVESTIGATION.

Your commission was assisted in its labors by the fullest co-operation of the architects, contractor, owner and Inspector of Buildings. Testimony, with very few exceptions, was freely given.

Through the courtesy of the City Solicitor and the Coroner your commission secured verbatim transcripts of the testimony of all witnesses examined.

Your commission has endeavored to so conduct its investigation that all personal considerations would be eliminated, that facts be found and stated, and that lessons be drawn to provide against the recurrence of similar disasters.

Your commission begs to express its appreciation for your co-operation and submits this report as covering the causes of the collapse of the Henke Building.

Respectfully submitted,

(Signed.)

Herbert B. Briggs,
Victor E. Thebaud,
B. R. Leffler,

W. O. Henderer,
James R. Gloyd,
J. C. Skeel.

DATA ACCOMPANYING REPORT ON HENKE BUILDING COLLAPSE.

Mr. F. G. Hogen,
Director of Public Safety,
City of Cleveland.

Dear Sir:—The Commission appointed by you to investigate the collapse of the Henke Building begs to supplement its report by the following information and recommendations based upon its investigations.

The Building Code was criticised by the Inspector of Buildings in three principal particulars: (1) the multitudinous duties imposed on the Inspector; (2) the lack of sequence in the Code resulting from its many reference features; and (3) the insufficient force authorized by the Code for its administration.

The administration of the Building Code is wholly upon a mandatory basis, a provision which in general is wise and proper, but one which, in some cases, imposes unnecessary hardships upon owners and builders. The Code should be so changed that, in cases where unreasonable requirements prevent the construction of safe and proper buildings and structures a provision should be made which will permit such buildings and structures to be erected.

Your commission addressed a letter to over one hundred architects, engineers, contractors, owners and others interested in building operations asking for replies upon the questions raised by the Inspector of Buildings relative to the Code, upon the Code's mandatory features and upon the advisability of licensing architects, engineers and contractors.

The replies to this letter and the investigation of your commission show an intense interest in the questions raised and indicate that immediate steps should be taken by the City to enact such legislative measures

as may be necessary to adequately meet the apparent defects in the Building Code.

Your commission therefore begs to submit the following recommendations, respectfully asking that you give them careful consideration and, if they meet your approval, that they be referred to the City Council:

First. That a Commission of building experts, not connected with the Department of Buildings, be created and authorized to prepare a thorough and complete codification of the Building Code.

That this Commission be requested to investigate and report to the proper department or body of the city government upon the following matters:

(a) The field and function of the Department of Buildings.

(b) The working relationship between the Department of Buildings, the Department of Police, the Department of Fire and the Board of Health, to ascertain whether these departments are working in co-operation; and to find whether there is any unnecessary overlapping of duties in these departments.

(c) The force employed in the Department of Buildings, to ascertain whether the present force is sufficient to administer the Code.

(d) The administrative and business methods of the Department of Buildings.

(e) Title X of the Building Code, to ascertain whether it fully and adequately provides for concrete construction.

(f) The duties of the Inspector of Buildings, to ascertain whether it is practicable for him to effectively discharge these duties.

(g) The consideration of the qualifications for architects, engineers and contractors engaged in the erection of buildings and structures in the City of Cleveland.

(h) The consideration of the question as to effective enforcement of Section 241 of the Building Code which provides a penalty for violation.

(i) The consideration of any and all other matters resulting from the codification work, which will improve and make the Building Code more efficient.

Second. That a permanent Commission of building experts be created and authorized to serve in an advisory capacity to the Department of Buildings and the Board of Appeal in the determination of technical questions arising from the administration of the Code; in the consideration of new forms of construction or of materials used in the same; and in all technical and administrative matters upon which the Department or Board may ask or require advice.

Respectfully submitted,

Herbert B. Briggs, W. O. Henderer,
Victor E. Thebaud, James R. Gloyd,
B. R. Leffler, J. C. Skeel.

WEST COAST CONCRETE NEWS.

San Francisco, Cal., Feb. 15.—No great amount of work is coming out just now, but there is plenty in sight to keep all the concrete contractors and concrete products plants busy through the spring and summer, and preparations are being made for the installation of a great deal of new equipment.

The California Steel Monolithic Company, recently organized, plans to erect factory buildings at a cost of \$150,000.00, near San Rafael, Cal., where a large tract has been purchased.

A branch of the Kompolite Company of New York has been incorporated here, capitalized at \$500,000.00, by A. M. Bergevin, H. L. Mack, W. J. Ehrich, I. and S. Jaros. The company intends to build a factory here for the production of building tile, fireproof floors and partitions. A factory to employ 200 men will be erected.

The Development & Securities Company, of Long Beach, Cal., C. R. Collins manager, will erect a big plant at San Bernardino, Cal., for the manufacture of concrete posts. They will install a \$100,000.00 rock crushing plant on a quarry site recently purchased.

The town of Anaheim, Cal., has let a contract for the erection of concrete electric light poles on the streets.

Bids will be received shortly for sixteen new concrete buildings as officers' quarters at Fort Winfield Scott.

The Southern Pacific Railroad plans to erect a \$100,000.00 four-story concrete office building on the site of its Fourteenth and Franklin street station in Oakland, in connection with its new electric suburban system.

O'Connor Bros., contractors of Red Bluff, Cal., have put in a concrete block outfit.

Contract for the erection of the new municipal wagon bridge across the Illinois river at Peoria, Ill., which calls for a large amount of concrete work, was let to the Milwaukee Bridge Company for \$166,896.50.

A CONCRETE DAIRY.

The Finest Equipped Dairy in Illinois Built of Concrete—Thoroughly Sanitary and Architecturally Perfect.

Among no class of the world's workers has cement been adopted to better advantage and satisfaction than by the agricultural and dairying interests. Modern ideas demand the most care and the highest degree of perfection in sanitation, especially in dairies. The dairyman who exercises the greatest care in the housing of his cows and in the equipment for their keeping succeeds best. This is an accepted fact by dairymen.

Just a short drive from the village of Bartlett, Ill., is the 400-acre dairy farm of S. P. Stevens, whose herd of thoroughbred Holstein Friesians are famous the country over. Mr. Stevens is a close student of the better housing and caring for his herd. The two accompanying photographs show an interior and exterior view of the dairy building when completed and in use.

When you enter the Oak Glen barn the most impressive feature is the warmth and comfort of the place, as experienced by the writer on a cold winter's day. The cows in their stalls ranged along the sides were feeding contentedly as if they were under the branches of a tree in the meadow on a summer day. The air is as pure as in the ordinary dwelling house, so perfectly is this plant equipped for the instant removal of manure. Frank G. Stevens, manager of the farm, and Rudolph Scholler,



INTERIOR VIEW OF DAIRY BUILDING OF S. P. STEVENS, BARTLETT, ILL.

the superintendent of dairy, both explained enthusiastically the details of the plant.

The barn is 213 feet by 40 feet, with walls 13 feet high from the bottom of the foundation. For 4 feet up the wall is 2 feet thick. That part above ground is 11 inches thick. Owl Portland cement was used throughout, this brand being selected after full consideration of all the brands available. For the concrete work a mixture of one part cement to five parts of gravel was used, and for all top surfaces and exposed surfaces a mixture of one part cement to two parts sand was employed. F. A. Struckman, a well-known cement contractor of Elgin, Ill., who did the work, says: "I was well satisfied with the cement." There is also a water tank of the Hurst system, constructed by the well-known firm of Chas. B. Hurst & Co., 843 Exchange avenue, Chicago, Ill.

The visitor enters the barn through a wide doorway and finds himself in a large apartment, on either side of which are large doors opening to the exterior from the two sides of the barn. The floors are all of cement and are thoroughly sanitary. Dairy Superintendent Scholler says there is little work connected with keeping the floors in the

proper condition. To the left, as you enter, is one wing of the barn in which the bull pens, hospital stalls and the pens for calves are seen, while on the other side of this section are stalls for dry cows. To the right is the main section, in which there are 86 stalls. The floor through the middle of the barn is 10 feet 6 inches wide, with a 16-inch gutter along each side. This gutter has a fall of 1 inch to 40 feet for drainage purposes. The stalls are 5 by 8 feet. Along the sides next to the wall are passageways to enable the attendants to handle the feed. In the floor at the head of the stalls is a cement trough the full length of the barn, into which pure water is pumped from a central plant adjacent to the barn. All stalls are equipped with stanchions of the Kent Manufacturing Company, Fort Atkinson, Wis. The barn is perfectly ventilated by the King system, with 18 windows each side of the main section at the top, and controlled by mechanism run by a single lever that opens or closes 9 at a time at the will of operator. Vents in wall at the bottom at each end of barn so foul air may escape, while between the windows 3-inch vents opening on the exterior of wall admit fresh air at all times.

The plant has two silos, 20 by 34 feet in dimensions, and their combined capacity is 500 tons. The barn has a complete water system, operated by a gasoline engine. From this plant is furnished the water which fills a great cement tank in the cooling room, in which the cans of milk are placed. This tank is also made of Owl cement. The capacity of the dairy at the present time is 2,500 pounds of milk daily. Mr. Stevens says that the arrangements are so economical that the best possible grade of milk is produced with the minimum amount of labor. Superintendent Scholler and one helper have no difficulty in caring for the herd except at milking time.

Neither waterproofing nor reinforcing was used in the cement. The concrete is dense, and no dampness has developed. The atmosphere in the barn is at all times dry and pure.

Every man interested in properly housing cows and making the labor of caring for them a pleasure is invited to visit this farm, where he will find a welcome at all times.

CONCRETE IN ILLINOIS.

Springfield, Ill., Feb. 21.—The Sneed & Cowan patent concrete ties have been consolidated and will be manufactured by the Consolidated Concrete Tie Company, of Pulaski, Ill., capitalized for \$100,000.00. H. B. Eshelman is secretary and treasurer.

The Circle Avenue Cement Block and Supply Company, of Forest Park, has been incorporated with a capital stock of \$5,000.00 to manufacture concrete products. The incorporators are Michael Hruby, John J. Kelly and Joseph H. Walsh.

The Fortune Post Company has been organized at Richmond, Ind., to manufacture cement posts for fences, with a capital stock of \$10,000.00. The incorporators are Mather B. Kelsey and H. B. Williams.

Dealing in concrete tile is the object of the newly formed Hazelton Tile and Construction Company, of Hazelton, Ind. The directors of the concern, which is to have \$10,000.00 capital stock, are E. E. Curtner, C. E. Elliott and N. D. Curtner.

The manufacture of concrete building blocks and other concrete products will be carried on by the recently incorporated United Monument and Construction Company, of Springfield. Plans for this branch of the industry have not yet been announced, but, according to George J. Sinneger, of Springfield, one of the incorporators, the concern's advent into the building field is assured. John G. Bloomer, a monument man of Carlinville, and Charles G. Miller, of this city, are the other incorporators of the company, which has an authorized capital stock of \$20,000.00.

W. J. Wooley, Joseph Beigler and C. K. Bagot have formed the General Cement Products Company, of Anderson, Ind., a \$25,000.00 corporation which will manufacture cement products.

INCREASE CAPITAL STOCK.

Waterloo, Iowa, Feb. 21.—The Cement Tile Machinery Company has decided to increase its capital stock from \$50,000.00 to \$125,000.00. The reports of the officers show a doubled business for the last year, and a large addition to the plant probably will be made in 1911. Officers chosen were: President, J. M. Schenck; vice-president, J. H. Stewart, and secretary, W. H. Stewart.

Base, Basse & Broeking, of Fredericksburg, Tex., have purchased the cement block and brick plant of F. D. Grobe & Son.



EXTERIOR VIEW OF DAIRY BUILDING, S. P. STEVENS, BARTLETT, ILL.

riety from every point of view except in the item of first cost. Views were thrown on a screen during the lecture, which proved an intellectual and educational treat the members of the association highly appreciated. "The road man," Mr. MacDonald said, "declared that a concrete bridge is an asset and a wooden one more than often a liability."

In the discussion which followed this lecture Mr. MacDonald was asked many questions, which he answered in that clear, simple manner peculiar to him, bringing order out of chaos in the mind of the inquirer.

F. S. Phipps read an interesting paper which made a marked impression on the members, entitled "Additional Notes on Steam Curing Plants."

In the discussion which followed the reading of this paper Mr. Phipps was asked the question: "When monolithic form is used, what about steam curing?"

Mr. Phipps: "That is a pretty hard proposition, I confess, and the only way to do is to use the head system."

W. A. Boeck, of South Omaha, believed the sun system the best in use on monolithic form.

T. C. Dougherty desired to know if the steam is carried direct to the curing room or if it is passed through water.

Mr. Phipps: "Use the steam direct from the boiler into the curing room."

F. Lillie, manager North Bend Cement Tile Mfg. Co., stated that the object of steam curing is to keep it from drying out. Therefore the most economical way of curing is to have the steam pass direct into the curing room.

The auditing committee reported the statement of the secretary and treasurer, Peter Palmer, correct and read it, showing a prosperous condition of the treasury. Adopted as read.

The nominating committee reported and placed the following names in nomination:

For president, H. C. McCord, of Columbus, Neb.

For secretary and treasurer, Peter Palmer, of Oakland, Neb.

For vice-president, G. F. Lillie, of North Bend, Neb.

Executive Board.

J. M. Brown, of Sutton, Neb.

Frank Berger, of Hastings, Neb.

Frank Whipperman, of Omaha, Neb.

T. C. Dougherty was empowered to cast the vote of the members of the association. He cast the vote for the above names selected by the committee.

G. F. Lillie moved that the executive board shall be empowered to fix the salary for the president and secretary for services rendered by them the past year. Seconded and carried.

The resolutions committee submitted a report tendering a vote of thanks to the Commercial Club and to J. M. Gillan, manager of the Omaha Auditorium. Carried.

Adjourned.

THE EXHIBITS.

Exhibitors were pleased with the courteous treatment they were given by the management of the Auditorium and the interest taken by visitors in the exhibit. Many sales were made on the floor and the exposition was pronounced a success in every way.

The exhibit of the Perfection Cement Stone Company, of Omaha, in charge of John F. McCreary, was one which the prospective home builder enjoyed. It showed him the different uses to which the various manufactured blocks of this concern may be applied.

The Continental Portland Cement Company, of St. Louis, had an exhibit which attracted attention. Its cement is noted for its light color.

The Nebraska Portland Cement Company was represented at the Auditorium by H. G. Calkins.

The Patton-Bowman Hardware Company, of Omaha, exhibited in the basement the heavy Smith concrete machinery, Sterling wheelbarrows, C. H. & E. pumps, saw rigs and hoists.

Coltrin concrete mixers were much in evidence at the Auditorium and many visitors at the booth kept W. B. Knickerbocker and E. L. Martin busy showing their good points.

As usual, the Universal Crusher Company, of Cedar Rapids, was represented by E. A. Velde, its sales manager. The model of the Universal crusher in actual operation crushing the hardest gravel, trap rock and granite, making the most desirable aggregates for concrete products, was one of the most attractive features of the show.

P. A. Tomes, of New York, was in charge of the booth of the Atlas Portland Cement Company, assisted by Walter Smith and W. D. Peters, whose territory is in Iowa, and W. C. Simpson, who travels



BOOTH OF EUREKA STONE AND ORE CRUSHER CO., OMAHA CONVENTION.

through Nebraska and northeastern Kansas. The miniature farm familiar to 6,000,000 people served as usual to attract much attention to the booth where it occupied a large space. The miniature farm is a panoramic replica of a farm entirely equipped with concrete buildings, walks, fences and greenhouses.

W. J. Konvolinka, vice-president, and Leroy A. Kling, of the Eureka Stone and Ore Crusher Company, of Cedar Rapids, Iowa, were busy entertaining for three days visitors at their booth inspecting the No. 1 B Mitchell Improved Crusher in full operation, crushing rock and granite. It is the same machine of which they have sent four lately to London, Ontario. When Mr. Konvolinka was not busy showing the "Mitchell" he was booking an order.

The crushers shown in the photograph of the booth are a No. 1 Mitchell Improved Crusher, connected to a 5 h. p. motor; a No. 0 Mitchell Crusher and a No. 3-A All Steel Eureka Crusher. This is the largest of the three machines.

The Peerless Brick Machine Company, of Minneapolis, Minn., exhibited at its booth its one man cement brick machine, capacity 12,000 brick per day. L. V. Thayer, its president, did not have an hour's leisure time the entire three days at the Auditorium. When he was not showing his machine to some visitor he was booking orders.

Charles W. Bradley, of the Anchor Concrete Stone Company, Rock Rapids, Ia., had on exhibit and gave a practical demonstration what the wonderful Anchor concrete block machine can do. The "Anchor" and the "Peerless" were the only two machines in the Auditorium which have not missed a cement show for eight years or since the first one was held in Indianapolis.

T. H. Bolte and J. R. White, of the Bolte Mfg. Company, Kearney, Neb., were in charge of its exhibit. The Bolte mixer received much attention from visitors.

The Chanute Cement Company, of Chanute, Kan., had an exhibit of cement samples of high grade.

W. E. Snyder and J. D. Stacy, proprietors of the La Grange Specialty Company, La Grange, Ind., were in charge of the exhibit where the "Little Giant" cement brick machine was in full operation. Mr. Snyder said: "I wrote two orders without getting out of my chair." Things were lively around this booth.

F. A. Kershaw had charge of the exhibit of the Kent Machine Co., Kent, Ohio. The "Kent" Precision concrete mixer in operation was one of the attractive features at the Auditorium.

The Polygon concrete mixer made by the Waterloo Cement Machinery Corporation, of Waterloo, Ia., as usual got its full share of callers at its exhibit in the Auditorium.

L. Alden Smith represented the Universal Portland Cement Company at its booth in the Auditorium.

H. F. Hobbs, of the Hobbs Concrete Machinery Co., of Detroit, Mich., was in charge of the exhibit showing in operation the Hobbs concrete block machine.

The good roads exhibit of the Minnesota Highway Commission in the gallery of the Auditorium created much interest and received crowds of visitors.

The Monarch Portland Cement Co., of Kansas, was represented by C. W. Peckham, of Haven, Kan., who exhibited a steel frame hollow wall concrete house of which he is the inventor and patentee.

The Eclipse concrete mixer, owned and manufactured by the Standard Scale & Supply Co., of Chicago, was represented by James Simpson, sales manager. The "Eclipse" ran in splendid working

order from early in the morning till closing time at night, to the delight of hundreds of interested visitors.

A great display of cement coating in various colors, manufactured by the Heath & Milligan Manufacturing Co., of Chicago, greeted the eyes of hundreds of visitors in its booth. The exhibit was in charge of Fred J. Morse, who has hosts of friends throughout the middle West.

OMAHA CONCRETE NEWS.

Omaha, Neb., Feb. 18.—The Omaha Concrete Stone Company, at 28th avenue and Sahler street, is the oldest plant in its line in the city. It manufactures the celebrated granite faced waterproof steam cured blocks, piers, porch columns, porch rails and balusters, flower vases and porch decorations. It also makes a complete line of window sills and caps, in fact, everything that can be made of concrete. The company's exhibit at the Mid-West Cement Exposition was one of the most attractive at the Auditorium. Frank Whipperman, its manager, stated that the capacity of the plant had been doubled this winter and that a complete steam curing system had been installed.

N. J. Peterson, president and manager of the Ideal Cement Stone Company, with office at 1704 Cumming street, and factory at 31st and Spaulding streets, established the business five years ago. It manufactures a complete line of concrete building stone for houses, foundations, and in fact everything that can be made of concrete. It was awarded the 1st prize in plain work and 2d prize on mantel work at the Mid-West Cement Exposition, where it had a fine exhibit.

The Dundee Cement Stone Works, at 46th and Dodge streets, was established by B. B. Hopper, its manager, two years ago last August. It has a modern equipment consisting of two Ideal block



DUNDEE CEMENT STONE WORKS, OMAHA, NEB.

machines of the Ideal Concrete Machinery Company, South Bend, Ind.; one Cottrill mixer; one Ideal tamper and molds without number. It manufactures concrete blocks for houses, foundations and special work in way of caps and sills, lintels, lawn vases, porch columns, etc. It received the 2d prize on work it exhibited at the Mid-West Cement Exposition. The booth at the Auditorium was one of the attractions at the show. The daily output of the "Dundee" is 800 concrete blocks.

The Perfection Cement Stone Company was incorporated in 1906. It manufactures concrete blocks and special work consisting of lintels, piers, porch columns, caps, ash receivers, balusters, etc. Its equipment is up to date, consisting of a Perfection power press, fully equipped; one machine making a sixteen-inch block, and a tamper and all the special moulds. F. McCreary, secretary and treasurer, stated the company was the pioneer in steam curing in Omaha. Its daily output is 1,600 concrete blocks. The exhibit of this company at the Mid-West Cement Exposition received much favorable comment.

The Lillie Construction Company, of St. Louis, has been incorporated. The capital stock is \$10,000.00. The incorporators are Max T. Lillie, Geo. M. Johnson and W. B. Lillie. The company will engage in general engineering and construction work.



IDEAL CEMENT STONE CO., OMAHA, NEB.

CHICAGO'S SUBWAY PLANS.

Plans for Chicago's subway system, prepared by Bion J. Arnold, were made public last week.

This is the first step of importance in the great undertaking which is destined to make Chicago practically the first city of the land; by removing the greater part of the travel in and about the "Loop" to the subway, where passengers can be quickly and safely transferred to their homes. The proposed railway system is to be the finest and most comprehensive ever planned for any city in the world. Master minds of the country in the engineering line have given their thought and time to the preparation of plans for the subway, which will reach the highest point ever attained in underground construction.

The requirements have been in the hands of these competent architects and engineers for many months and the plans now given to the public are the best that could be had after time, money and brains had been expended to make them what they are, the finest ever drawn.

To the average mind, the manifold benefits resultant to the installation of the system can not readily be grasped owing to the magnitude of the project. Only after the underground railway is running and the benefits are plain to the eye, will it be apparent to the public that the undertaking was more than child's play.

Funds now on hand will probably be sufficient for the construction of the first link, and the system can gradually be extended until every section of the city is reached by underground railways.

The plans show a subway extending from building line to building line on two levels, the north and south lines running over those extending east and west. Loops in the business district are eliminated so far as possible, though the first steps in construction provide for loops until the more comprehensive system is completed.

Two Plans Submitted.

Two separate and distinct plans are submitted by Mr. Arnold, and though he recommends the adoption of plan No. 1, he has so arranged the system that if plan No. 2 is adopted it ultimately can be made a part of plan No. 1 when necessity and traffic conditions warrant such a step.

The report goes into minute detail regarding plan No. 1, showing the successive steps or stages necessary to develop it. These steps are shown in seven separate maps, each new step as added fitting into the whole completed system.

Briefly, the plan contemplates a high speed, comprehensive system designed to ultimately reach all parts of the city, in which could be operated high-speed and local trains independent of any of the present transportation companies. The system could be built by the city or by private capital. It could contain at first the present surface cars, later the elevated trains, and ultimately high-speed trains.

On a Smaller Scale.

Plan No. 2 is on a less comprehensive scale and is designed to be used exclusively by the present surface cars for the relief of congestion in the business district.

In his report Mr. Arnold lays down the principles on which a subway system such as proposed under plan No. 1 should be constructed as follows:

"1. Through operation from the southern terminus to the northern terminus, wherever they may be located, and vice versa, upon as straight tracks as practicable, on one or more of the following streets: Michigan avenue, Wabash avenue, State street, Clark street, Fifth avenue, Halsted street, Western avenue, etc.

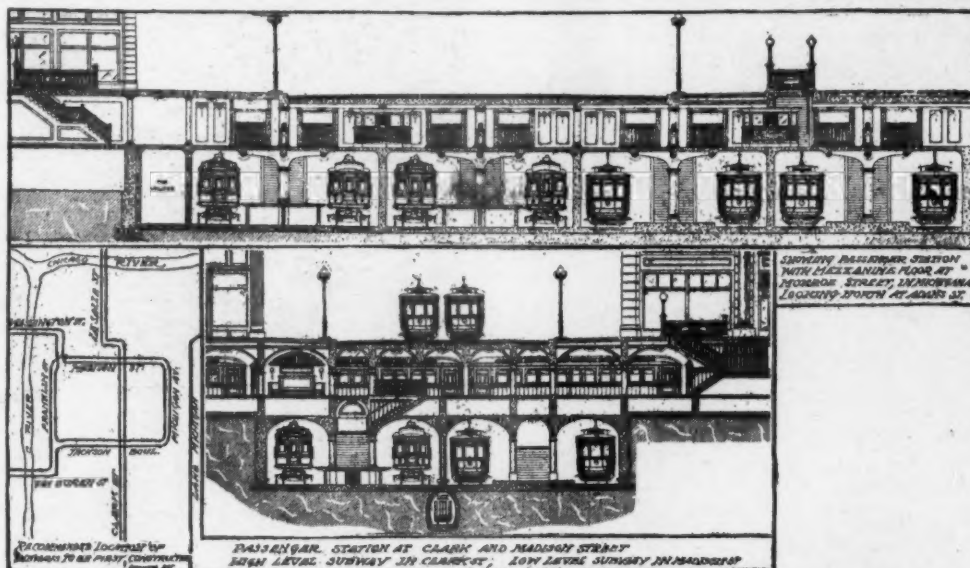
"2. Similar east and west subways, with the grades separated where they cross the north and south subways, located, to start with, say, on Madison street, and eventually upon such other east and west streets, north and south of Madison street, as future conditions may demand, utilizing, however, at once certain of these streets in the present business district for loop terminals for the present West Side surface and elevated cars.

"3. These north and south and east and west subways eventually to be supplemented by diagonal subways upon Milwaukee avenue, Blue Island avenue, Archer avenue and such other diagonal streets as the future may determine best to locate subways upon."

Shows No Favoritism.

In such a system, according to Mr. Arnold, no particular business district would be given any permanent advantage or any advantage which the natural expansion of the system would not rectify.

No attempt is made in plan No. 1 to provide for universal through routing of trains, although it does provide for through routing between the North and South sides and from east and west streets.



Through routing by means of branches at right angles, which is possible and practicable on surface lines, Mr. Arnold holds, would not be practicable underground, as it would necessitate too expensive construction and dangers in operation, which are deemed neither wise nor necessary.

The first construction step recommended is designed to relieve the congestion on Clark street. It provides for a two-track subway, so constructed that two additional tracks can be added when needed. The LaSalle street tunnel would be utilized for this link, the bore running south in LaSalle from the end of the tunnel to Madison street, rising to a high level at Washington street in order to clear the east and west bores; east in Madison on a high level and south on Clark street to Archer avenue.

The accompanying cut shows a copy of the subway plans, giving views of bores on two levels to eliminate grade crossings.

A complete model of the subway, designed by Mr. Arnold, was on exhibition at the Chicago Cement show and proved the merits of the proposed underground railway to the satisfaction of all.

Would Cost \$3,000,000.

The estimated cost of the initial bore is placed at \$3,000,000.00. It would be a little more than two miles in length, of double track, and have four stations. An alternative route is suggested, following the first route to Polk street and branching into either Plymouth court or Custom-House place and extending south to Fourteenth street, where the southern terminus would be located. The estimated cost of the alternative plan is \$2,500,000.00.

The second step in the development of plan No. 1 contemplates a connection with the Northwestern Elevated near Franklin street and Chicago avenue by way of Chicago avenue to State street, and south on that thoroughfare to Twelfth street, where it would be connected with the South Side Elevated.

Steps three and four provide for the further development of the West Side loops, and step five provides for a complete warehouse and steam railroad passenger terminal loop.

Summary of Plan No. 1.

The advantages of plan No. 1 are summarized by Mr. Arnold as follows:

- (a) A comprehensive system starting with a nucleus involving a small investment, but capable of gradual expansion until the system extends under the entire city.
- (b) No grade crossings.
- (c) High-speed straight-line operation, with few switches or curves.
- (d) Least practicable first cost.
- (e) Great flexibility and always tending to enlarge the business district in three directions.
- (f) Easy of access to passengers owing to the shallowness of the high-level subways, which allows the platforms of the low-level subways to be within twenty-eight feet of the surface of the streets.

The report covers lighting, ventilating, drainage, sewerage, housing of public utilities and other details. The public utilities may be placed temporarily or permanently in alleys.

The report has been submitted to the city council and Mr. Arnold is ready to begin actual construction as soon as authorized by the council.

SOUTHWESTERN RETAILERS.

Instructive and Enthusiastic Meeting of Southwestern Lumbermen's Association Held at Kansas City, Mo.

Kansas City, Mo., Feb. 1.—The twenty-third annual convention of the Southwestern Lumbermen's Association was held in this city on Jan. 25, 26 and 27. It was a well attended convention and the lumbermen practically owned Kansas City all the week. The membership at present is the largest in the association's history, there being in all 1,900 retail concerns affiliated with it.

Two addresses stood out as the most important features of the set program. The first was by J. W. Barry, of Cedar Rapids, Iowa, and was delivered at the opening session Wednesday morning. His topic was "The Cost of Doing Business," and followed the lines of a similar address delivered at the meeting of the Northwestern Association at Minneapolis, Minn. Mr. Barry was heard with close attention, punctuated with enthusiastic applause. His chief point was that, while the retailers might not legally combine to fix prices that would return them adequate profits, they could together investigate the cost of doing business and would thus naturally be forced to sell at a price that would be profitable.

The other conspicuous address was that of Ben R. Vardaman, of Des Moines, Iowa, on "The Art of Making a Sale." Mr. Vardaman in a plain and sensible way discussed the psychology of salesmanship, and told how suggestions might help or hinder a sale.

Officers Elected.

On recommendation of the committee on nominations, the following officers and directors were then elected:

President—Howard E. Case, of Wichita, Kan.
Vice-president—A. F. Parkinson, Wagoner, Okla.
Second vice-president—L. B. Seibel, Kansas City.
Treasurer—J. H. Foreman, Kansas City.
Secretary—Harry A. Gorsuch, Kansas City.
Directors—Julius Sidel, St. Louis, Mo.; F. M. Hartley, Baldwin, Kan.; J. R. McLaurin, Ellsworth, Kan.; Will Hardman, Phillipsburg, Kan.; J. E. Marrs, Oklahoma City, Okla.; and James Costello, Liberty, Mo.

TO BUILD LARGEST CONCRETE DOCK.

The Evansville Sand and Gravel Company, of Evansville, Ind., will spend \$50,000.00 in building a dock on the water front. The dock will be of concrete, with 500 feet frontage. These docks will be the largest on the lower Ohio.

A. E. Cline, of the Perfection Concrete Company, Ltd., Winnipeg, Man., recently completed the contract with the Canadian representative of the Concrete Stone and Sand Company, of Youngstown, O., for a complete outfit of tile manufacturing machines, and they are organizing their plant so as to manufacture Pauly tile at Winnipeg. This is the fourth plant that has been started in Canada within the past year.

Side Talk

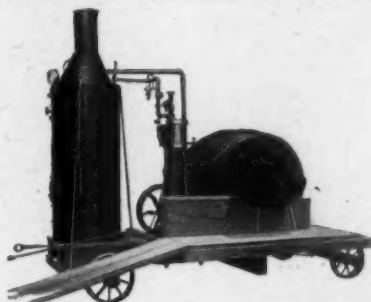
in which the Advertiser tells his own story

THE ECLIPSE CONCRETE MIXER.

The Eclipse Concrete Mixer is a machine especially adapted for various classes of work and is at present attracting large attention from the concrete contractors throughout the entire country.

The special feature of this machine and the low charging open drum, which makes it necessary for the charging platform to be only about 24 inches high when mounted on truck, and the outfit is always complete and ready for operation as soon as it arrives on the job.

It is only required to wheel the material on this charging platform and a barrow can be run up a 12-foot plank almost as easily as on the ground. The material from the barrow is thrown into the

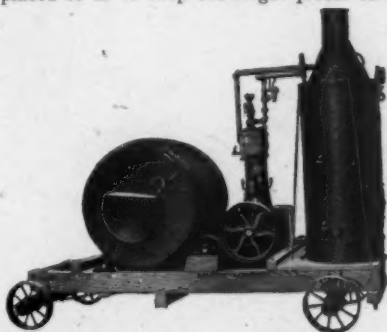


CHARGING END ECLIPSE CONCRETE MIXER.

drum very quickly, on account of the large opening.

An advantage of the large opening in charging end of drum is that the entire batch can be seen while mixing and it can be determined before discharging that the concrete is in the exact condition desired. The fact that the entire batch can be seen while mixing enables the contractor to produce uniform high-grade concrete, insuring good reputation for first-class concrete work, which is very important. The interior of the drum is also easy of access for any purpose.

The mixing blades are arranged to thoroughly agitate and mix the materials as quickly as possible. They break or prevent the rolling up of small wet sand balls without cement in them, as is often done in mixers without blades. The blades are placed so as to keep the larger pieces of stone



DISCHARGING SIDE ECLIPSE CONCRETE MIXER.

or gravel mixed with smaller particles and prevent their discharge separately.

The discharging arrangement of this mixer is semi-automatic in that the discharge door is thrown and held in either mixing or discharging position by a strong spring under tension, and all that is necessary for the operator to do is to throw this door past the center of tension in either direction and the spring will complete the movement and hold the door until it is again thrown by the operator. This door can be opened for discharging and left open until the entire batch is discharged, or if it is desired to take the concrete away in barrows, as most sizes are made to discharge about one wheelbarrow of concrete per revolution. It is not necessary to have a special man operate the discharge door, as the men wheeling can throw the lever without any difficulty whatever.

When the work is rushed the concrete wheelers can discharge into barrows without closing the discharge door after first opening it. To do this it will be necessary for them to have enough barrows ready so that when the door is opened and the first barrow loaded from the first discharge revolution



HARPER MEMORIAL LIBRARY OF THE UNIVERSITY OF CHICAGO, WATERPROOFED WITH CERESIT.

of the drum, the first wheeler will draw his barrow back from under the discharge chute and the second wheeler push in a barrow from the other side, catching the discharge from the second revolution, etc. We have seen this method used very frequently and after a little practice the men take care of the mixed batch this way without any difficulty, the total discharge being made from one bag batch in three or four revolutions.

When not taking the material away in wheelbarrows, or when discharging the concrete all in one batch, the man who is feeding the mixer throws the door by the discharge lever which you see at the charging end of the drum and an extra man is not required to discharge the batch.

We have given this description to enable the contractor to determine what can be accomplished by using the Eclipse Concrete Mixer, as the selection of a concrete mixer resolves itself into using a machine so designed and equipped as to put through the greatest amount of uniform, thoroughly mixed concrete with the lowest cost for labor and also for repairs, which are kept to a minimum when using the Eclipse mixer, on account of the simplicity in construction and freedom from complicated mechanisms, hoists, etc.

While the machine as described would be the ordinary outfit mounted on truck, the Eclipse is built in various styles, capacities and is mounted to suit special conditions, also furnished with hoist for handling the mixed concrete when desired. The mixers are also furnished with either gasoline, steam or electric power. The contractor will appreciate that the price for materials, cement, sand, gravel and water are constant and the reduced cost of mixed concrete must be accomplished very largely through the use of an economical mixer—that is, one that is economical in mixing and also in handling materials to and from the machine—hand mixing being too expensive to be considered.

The capacity of the Eclipse mixers can readily be determined when the contractor will figure the amount of concrete he can produce by mixing a batch per minute, and, in fact, he will be surprised with the results that can be obtained from this mixer.

The contractor may inquire as to the operation of charging and mixing blades and the discharging arrangement, and in explanation would say that the charging blades are set diagonally and made to overlap so that when the material is fed to the blades over the charging chute that it passes into the interior mixing portions of the drum as the drum revolves and the blades advance and cannot return again as the drum is kept revolving. For discharging there is a low blade extending across the drum and leading to the discharge pockets. This blade is low enough so that the greater part of the material falls over when the drum is full, but carries over the balance of the material to the pockets when the drum is nearly empty.

One other feature about the Eclipse mixer is that it will operate on either wet or dry mixed and with any kind of material. It can also be used for mixing cement mortar or top dressing for sidewalks, the smaller sizes being especially adapted for sidewalk work, where the light, portable machine is preferable. A superior quality of cement mortar can be made at a much lower cost than when mixing by hand. High-grade mortar is always secured. The Eclipse is also used for mixing tar products, such as westrumite, etc., which are more difficult to mix than ordinary concrete.

A PRACTICAL WATERPROOFING.

One of the most needed factors in the cement and concrete field is a successful waterproofing compound. There have been several of the compounds put upon the market and pushed for large sales for a short time, only to pan out and become back numbers after impartial trials. And again, there are now on the market a number of waterproofing compounds which have proved their merit in a greater or less degree and are in use on different construction work in concrete.

Among these compounds which are practical is Ceresit waterproofing. Although this article has been on the market only a comparatively short time, it has rapidly taken its place with the leaders in its particular line and is much in use.

It is a white paste, easily dissolved in water. This water is used instead of plain water for mixing concrete or mortar. By this method it is less difficult to obtain a thoroughly uniform mixture of the water-repelling substance with the mortar or concrete. Heat or cold does not affect the compound. It does not color nor discolor the cement and it is absolutely permanent.

Being a German invention, it has been used in Europe extensively for all classes of waterproofing work, such as basements, tunnels, reservoirs, water-towers, swimming pools, dams, bridges, etc. It has been adopted by the German and Austrian governments for construction when waterproofing is necessary.

The first large job in the United States where Ceresit was used is the Harper Memorial Library of the University of Chicago, Shepley, Rutan & Coolidge, architects. In order to secure this contract and become thus introduced, the manufacturers gave a surety bond for \$5,000.00 to guarantee the basements of this building free from dampness for three years. Many other large structures have since been waterproofed with Ceresit. To name a few:

Swimming pools for the Y. M. C. A. buildings at Wilson avenue, Hyde Park, Chicago, and Gary, Ind.; also one for Doubleday Page Co., at Garden City, L. I., N. Y.; basements of Harold McCormick residence at Lake Forest, Ill.; Tuberculosis Hospital at Oak Forest, Ill.; Library Building at University of Toronto, Ontario; Black Hawk National Bank Building, Waterloo, Iowa; Philadelphia Safe Deposit Company; Dominion Bank, Winnipeg, Manitoba; City Hall, Ottawa, Ontario; Hermitage Hotel, Nashville, Tenn.; concrete reservoir for navy station at Key West, Fla., holding 1,300,000 gallons of water.

This product is manufactured by the Ceresit Waterproofing Company, with general offices at Chicago, Ill.

The Aetna Powder Company has issued one of the most sensible calendars we have seen. It is especially adapted to the busy office man's use and every recipient will appreciate it.

The old maxim says that "imitation is the sincerest flattery," and the Clinton Metallic Paint Co., of Clinton, N. Y., are calling the attention of the trade to the fact that their brick and mortar colors are the only colors that are imitated. For several years other manufacturers have been offering goods on the market as "Clinton," and this company is advising the trade to be sure and get goods which bear their "Little Yellow Side-Label," which is not only a sign of the genuineness of the goods, but a guarantee of the highest perfection in colors.

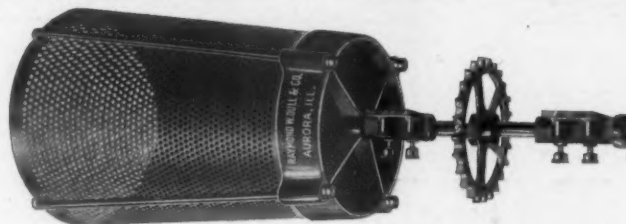
RAYMOND W. DULL & CO.

It has only been during the last few years that engineers have made a study of machinery used in preparing building materials for contractor's use. The demand for clean sand and gravel is responsible in a great measure for the discarding of the old style dry screening plants, and, even worse, bank run trade for concrete purposes. The preparation of these materials by removing clays, mud and other undesirable substances, has developed the modern sand and gravel washing plants. Raymond W. Dull & Co., of Aurora, Ill., have attacked these problems from the designing engineer's point of view, and are furnishing complete washing plant equipments.

Figure 1 shows their improved conical screen, which is appealing to the trade because of its simplicity. It is designed to enable changes to be made very quickly in the perforated metal. The perforated metal is drawn into a cup shaped recess in the casting by large, heavy hook bolts, which secure as well as support the screen cone. To remove the screen plate it is only necessary to loosen the nuts on the hook bolts, turn the hooks outward and swing the perforated metal cone out and a new cone in. This operation does not take over a half hour's time, and can be done with unskilled labor. With other types of conical screens, the screen plates are bolted to the outside of the casting. This construction has not been entirely satisfactory, because the foundryman in moulding the casting cannot possibly rap the pattern in the mould the same amount and get a uniform diameter of the casting. A variation of even an eighth of an inch makes over three times that amount in the circumference and accounts for the difficulty of matching the securing holes in the screen with those in the casting. So serious has been this feature of matching the holes that manufacturers of this style of conical screens have given up trying to match them, and send the renewal screen plates with the margin, without holes, compelling the purchaser to ratchet all these holes by hand, in the field, and while up in the air fifty or sixty feet. This requires a skilled mechanic, instead of a laborer, and shuts down the plant from one to two days. These screen plates wear out very rapidly, especially the fine mesh which requires a light gauge metal. Market conditions also change, requiring a change in the perforation. The screen, it will be noted, has the bearings away from the grit and water, and the perforated metal can be removed without disturbing the remainder of the machine.

Figure 2 shows the usual arrangement of these conical screens and is self-explanatory. Fresh water is pumped into the screens against the flow of material, insuring clean material and also resisting the tendency of the material to leave the screen too soon.

Figure 3 shows an arrangement of shaking screens for washing sand and gravel. This style is well adapted for certain cases and has several advantages over either the conical or cylinder screen. One important advantage is that the screens do not require the plant to be built up so high in the air. This is accomplished because the spout



RAYMOND W. DULL & CO.'S IMPROVED CONICAL SCREEN. FIGURE 1.

and screen slopes are considerably less, and the screen motion moves the material along. The entire screen area is screening and the expensive part of the screen or perforated plate is reduced to a minimum area. The first cost is favorable to the shaker screen for the same capacity and of course the cost of structure and bins is less. Shaker screens have become so popular in the stone crushing plants that manufacturers of crushers have begun to manufacture this style shaker screen for their trade. The novel feature of this design of shaker screen is the reverse flow of the material, which takes out the coarser sizes and keeps the water until the last separation. This is contrary

and described in Engineering News, January 12, 1911.

Practically all the sand and gravel washing plants built during the last few years elevate the material by means of belt conveyors. There is no better device known than this means of transportation. The principal parts of the conveyors which wear out are the pulleys. These have always heretofore been made of cast iron, but Raymond W. Dull & Co. are doing a large business supplying a pressed steel pulley formed from $\frac{3}{8}$ " metal.

Figure 4 shows how the pulley is constructed. It is practically indestructible, will wear longer, is easily mounted, and has the remarkable advantage

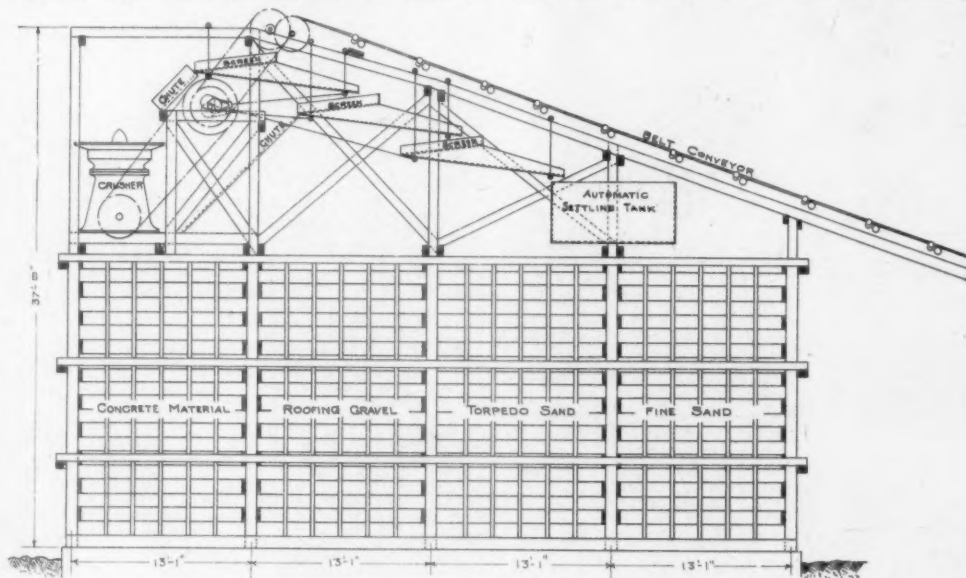


FIGURE 3.

to shaker screen practice for all other kinds of material. The main difficulty with the shaker screen has been to spread or distribute the material delivered by the belt conveyor or elevator over the full width of the screen. This distribution is accomplished by means of a distributor, designed by them,

that it costs less than the cast iron pulley.

If you examine the scrap piles of owners of sand and gravel plants you will find shafts with several conveyor idler pulleys on them, with possibly only one broken pulley on the shaft. It is necessary to throw this shaft and these pulleys away, because it is impossible to remove the cast iron pulleys from the rusty shaft. The steel pulley is split and saves the purchaser considerable, because it is possible to clamp it where the broken pulley has been, and does not disturb any of the other pulleys on the shaft. This makes it unnecessary to throw away the complete idler.

THE PAINTING OF CONCRETE.

"You are aware," says the Glidden Varnish Co., "of the fact that due to the rapid strides which are being made in cement and concrete construction, the painter has been called into a new field of labor and has, up to the present time, had very little information relative to materials and their practical application, as pertaining to the waterproofing, decoration and protection of concrete surfaces, including floors, interior and exterior walls, also stucco and composition surfaces carrying lime and alkalis, which will not stand ordinary linseed oil paints and coatings."

"We have made a thorough and exhaustive investigation of this subject, and have placed on the market the proper materials to permit of the painting contractor entering into this new field with the greatest of satisfaction from standpoints of profits, quality, ease of application and general results."

"Our materials have been used on almost every conceivable condition and have proved themselves to be standards of quality and efficiency."

"The painting of concrete is a specialty and demands an especially good price. If you desire to familiarize yourself with our products, we will, upon your request, send gratis samples and you have our best assurance that in becoming familiar with

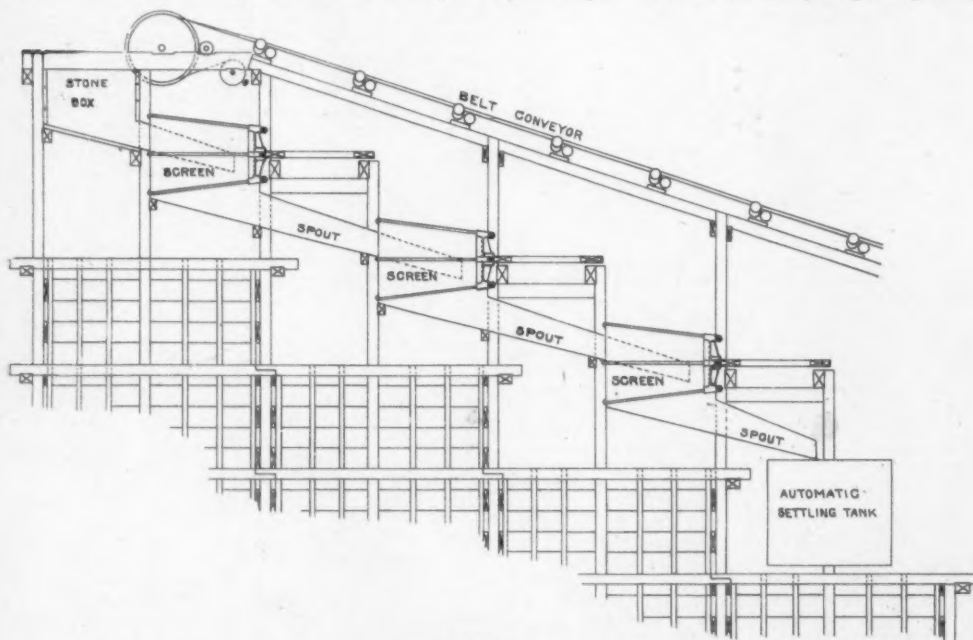


FIGURE 2.

these products and their method and ease of application, it should develop a new branch to your business which would prove more profitable than the general run of painting contracts, as the architect and owner realize that this is all special work and demands a special price."

"Up to within recent years, only black bituminous paints were thought of for coating concrete surfaces and these surfaces were generally sub-structural, needing waterproofing, and coated only for their waterproofing properties. Now the sub-structures that were hidden in the earth as foundations, comprise exterior and interior walls and floors, due to the methods of reinforced concrete construction."

"The adoption of cement and the access to its constituents has proved an important factor to its development, because of its cheapness, fire resisting qualities and its stapleness as a building material."

"Paint for cement, concrete and stucco surfaces is practically divided into two great divisions:"

"1st—Colorless liquids."

"2nd—Pigments and vehicle paint."

"They have two major functions to perform—decorative and waterproofing, with nine minor functions."

"1st—It must contain a vehicle and pigment, working in conjunction with the action of cement, concrete or stucco surfaces."

"2nd—It must be uniform and able to uniform the surface."

"3rd—It must contain an alkali, acid and sun-proof color and pigment."

"4th—It must produce a finish sufficiently close to the texture and originality of the surface."

"5th—It must be sufficiently moisture-proof to prevent the penetration of moisture."

"6th—It must be sufficiently adhesive to bond to the concrete."

"7th—It must be sufficiently heavy to fill the voids and stop the suction."

"8th—It must be sufficiently elastic to conform to expansion and contraction."

"9th—It must have a sufficiently hard wearing surface to allow successive coats without further treatment of the surface."

"Colorless liquids are used upon marble, granite, colored terra cotta, white cement and high grade cast stone surfaces for waterproofing and preventing discoloration, due to the elements, but they do not uniform the surface. Their action is generally a chemical change upon a cement concrete and stucco surface."

ROAD MACHINERY CATALOGUE.

The Good Roads Machinery Company, Kennett Square, Pa., selling agents for the Climax Road Machine Company, Marathon, N. Y., has issued an attractive catalogue of their road making and building machinery. This catalogue describes in detail the different types of machines for sale by the above company, and to one who needs machinery it has to be seen to be appreciated. A copy can be had upon request to the company's offices at Kennett Square, Pa.

CEMENT PRODUCTION IN 1910.

The production of Portland cement in 1910 reached the enormous total of 76,000,000 barrels in spite of the fact that many large engineering operations were laid on the shelf for the time being and

other big undertakings reached completion. The Hudson River tunnel and the Detroit River tunnel made a very large consumption that fell off completely in 1910, and there were many more similar jobs that everybody felt were using all the cement that dropped out of demand. It appears that their loss is imperceptible. The long postponed railroad improvements have reached such a stage that there is certain to be greater activity in the coming season in this direction than for several years past.

The wider applications of concrete will unquestionably continue to grow, because of the permanent character of concrete improvements when properly laid appeals to the American investor of the present day much more than it would have done a generation ago, when there was a widespread belief that the natural resources of this country were limitless in extent and value.

It is altogether possible and even probable that the close of the present decade will record a demand and a supply of 100,000,000 barrels of Portland cement made upon standard specifications, and 25,000,000 more made to meet particular requirements as to color, plasticity and time of setting. It is the most progressive industry of the foremost age that civilization has ever known. The leader who anticipates the future is he who meets opportunity when that sister of fortune is in her most beneficent mood.

The Hercules concrete block machines, which produce handsome ornamental effects in building blocks, cornices, friezes, etc., are shown by the Century Cement Machine Company, of Rochester, N. Y., at booth 47, where A. T. Bradley explains the good points of the machine. He is assisted by S. H. Finley.

Francis M. Barton, prominent Chicago architect and inventor of the Barton "Spider web" system of reinforced concrete, has an exhibit near the center of the Coliseum of the Barton system. Among many other things of interest and merit there is displayed a perspective of a concrete residence that was won at the cement show one year ago. The lines for this handsome piece of work were drawn by Mr. Barton as a donation, and his system of floors, etc., were used throughout. All the walls and partitions are of concrete hollow tile.

The Detroit Steel Products Company, at Booth 277, in the balcony, has an exceptionally interesting exhibit showing the methods of installation in concrete and masonry of the Detroit Fenestra solid steel sash. Glazing for the sash consists of transparencies of Fenestra sash installations. The booth is in charge of V. H. Christian and W. H. Schmeltz.

E. H. Fuhrman is at Booth 30 showing the new concrete mixer produced by the Elite Manufacturing Company, of Ashland, Ohio. This is called "The Low Down" concrete mixer. One of the features of

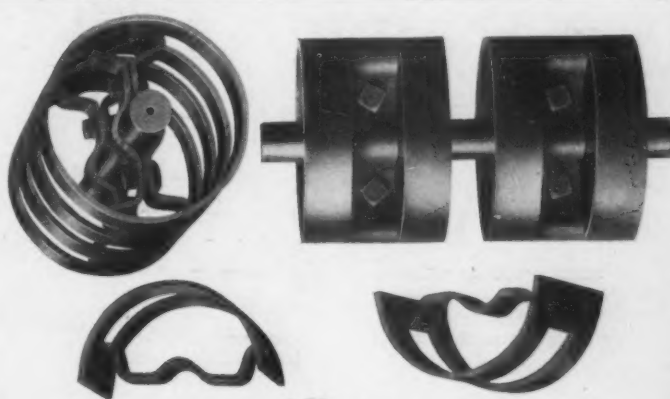


FIGURE 4—THE DULL PRESSED STEEL PULLEY.

this machine is the low elevation of the hoppers, which enables one man to do the work of two in shoveling into them. There is a force feed into the mixer trough which can be adjusted while the machine is in operation and gives absolute accuracy in measurement. The mixing trough is open so that it can be readily cleaned. It is set upon wheels and the machine can be folded so that it can be transported anywhere very easily.

A. W. Ross, assistant to General Manager Harold G. Simpson, of the Simpson Cement Mold Company, at the exhibit of the famous Simpson cement molds for porch columns and lawn decorations, is a practical concrete expert, and is the man who manufactured most of the sample work of the exhibit. Mr. Ross talks entertainingly to practical workers on the use of the Simpson molds, which are the standard tools for the manufacture of all kinds of columns, spindles, flower vases, etc.

One of the most entertaining exhibits in the entire Coliseum is the miniature model of the Universal mill at Pittsburg, in which the freight trains are switching backward and forward with trainloads of cement. It is done in such a way that it gives a person the actual impression of a visit to a great cement mill. It crystallizes the moving picture idea, which has become so popular in recent years for use in the Cement Show.

L. O. Kuhner is in charge of the exhibit of the Stocker Concrete Material Washer Co., where they have exhibited the only successful machine that has been introduced for the purpose of washing sand and gravel so as to make it applicable and useful in the best class of concrete work. Nature has not always provided materials that are immediately ready for use and the Stocker gravel washer is a machine that has made good in many places.

The neat exhibit of the Chicago "AA" Portland Cement Company, is one of exceptional grace and beauty. It is entirely constructed of concrete and designed with most artistic skill. J. C. U. McDaniels, W. F. Main, E. A. Mollan, M. R. Lilly, J. W. Beckmen, R. Crawford, E. F. Muhler, and several more of the organization were on hand last night.

CLASSIFIED ADVERTISEMENTS

Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.
Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYEES WANTED

WALL PLASTER MANUFACTURER.

Wanted—An experienced manufacturer of wall plaster to take charge of new plaster mill. Address
A. A. STEVENS, Gen. Mgr., Tyrone, Penn.

WANTED.

If you are in need of or wish to sell anything which comes under any of these classifications, write us. If you have something not coming under these classifications we will create one for you.

Wanted Quarry Foreman

For Modern Crushing Plant

Write Giving Experience, References and Salary Expected.

Box 791 Rock Products

EMPLOYMENT WANTED

SUPERINTENDENT OF LIME WORKS.

Position wanted as superintendent of lime works. Fourteen years' experience, a hustler and can furnish best of references. Address D. O. S., care ROCK PRODUCTS.

CEMENT SALESMAN.

More than fourteen years' experience. Widely acquainted with the trade in New York, New Jersey and Pennsylvania, desires position with a solid concern who is looking for a live wire.

Address "LIVE WIRE," care ROCK PRODUCTS.

SUPERINTENDENT.

Wanted—Position as superintendent in crushing or quarry plant. Experienced.

Address 795, care ROCK PRODUCTS.

EXPERIENCED.

Wanted—Position as superintendent in crushing or quarry plant.

Address 796, care ROCK PRODUCTS.

MACHINERY WANTED

SAND DRIER.

Wanted—A second hand rotary sand drier, having capacity of 6 tons per hour. Address
H. W. CALKINS, West Toronto, Ont.

MATERIAL FOR SALE**STEEL DUMP CARS.**

For Sale—Several dozen Koppel all iron and steel rocker side dump cars of 1, 1½ and 1¾ yard capacity for 30-inch gauge track. Also several thousand feet of 30-inch gauge portable track made of steel tie rail with steel ties and splices complete in 15 ft. sections, both in 16 and 20 pound weights. All of it in fine condition, and at a big saving to you in cost.

WILLIS SHAW MACHINERY CO.,
171 La Salle St., Chicago, Ill.

PLANT FOR SALE**Fine Ballast Plant**

Comprising 2 No. 8 Gyratory Crushers, each with 80 ft. elevator and 48" screen. Excellent condition. Will sell separately if so desired. Power plant also if wanted. Immediate delivery. Attractively priced.

Willis Shaw Machinery Company
171 La Salle Street, Chicago, Ill.

CRUSHING PLANT FOR SALE

1 set of 42" x 14" rolls, weight about 26,300 lbs.
2 single unit centripact screens, weight 2,200 lbs. each
5 pulley feeders, weight 400 lbs. each.

(This equipment is practically new, having been in actual service not more than six hours).

If interested, address

THE STRUTHERS FURNACE COMPANY
CLEVELAND, OHIO

For Particulars

F. A. Jones, M. E.

Gypsum Specialist

Consulting, Mechanical and Chemical Engineer, in Designing, Construction and Operation of Plaster Mills, (Kettle or Rotary Process), Elevating, Conveying and Crushing, Mechanical Drying, (Kiln or Rotary) and Hydrating Plants, Power Houses, Pumping Stations and Water Power.

Examination, Tests, Analysis and Reports. Plans, Specifications and Superintendence of Construction.
311-C FEDERAL BLDG.
YOUNGSTOWN, OHIO.

Western Engraving
& Colortype Company
114-119 Federal Street.



CHICAGO.

CRUSHED LIMESTONE QUARRY.

Excellent railroad facilities. Property comprises 7 acres with complete working plant, 4 miles from Watertown. Daily output, 150 yards. Address
RACEK & MALDANER, Watertown, Wis.

Stone Crushing Plant

For Sale—Capacity, 400 tons 10 hours. Jaw crushers, large 24"x15", talling 16"x10"; elevator, screens, boiler, engine, storage bins (for loading cars and wagons). All modern heavy and good as new. Drawings furnished for taking down and re-erecting.

Address

"S, 25," care ROCK PRODUCTS.

BUSINESS OPPORTUNITIES**COST SYSTEMS.**

Office man of many years' experience, familiar with rock quarrying and crushing accounts, will devise systems and forms for keeping track of costs, output, etc., to meet individual requirements. Moderate charges. Correspondence solicited. Address J. E. SMITH,
327 W. Market St., Bethlehem, Penn.

CAMP.

For Sale—134 acres virgin forest, mainly hardwood, in province of Quebec, Canada. Immense cedar log camp, finished in hardwood; accommodations for 10 or 12 people. Completely equipped with every household convenience and finely finished with "Craftsman" furniture. Large living hall with immense fireplace; extensive verandas, 4 bedrooms. Ice house, woodshed and garden. Camp beautifully situated on 5 mile lake; clear water; 3 good boats. Plenty of gray, red and salmon trout; smaller lake also on property. Fine deer hunting and partridge shooting. Price \$8,000 cash. For circular, giving full particulars, address
"CANADIAN CAMP," Rm. 500, 110 W. 34th St., New York City, N. Y.

Shaw's Booklet

The March issue will be ready for mailing this week. You should have a copy if you are interested in machinery for drilling, excavating, pumping, hoisting, crushing, elevating, transporting, screening or digging. 40 pages of up to date machinery; gives make, size, type, capacity, location and price. It's free.

If you are not on our mailing list—get one.

WILLIS SHAW MACHINERY CO.
171 La Salle Street, Chicago, Ill.

**Attention, Quarrymen!**

For Sale—No. 8 Austin Gyratory Crusher. No. 6 and No. 3 Austin complete plant. No. 3 Gates and 2 No. 6 Gates and No. 5 "B." 90 ton Marion Steam Shovel, 3¼ yard. 75 ton Vulcan Steam Shovel, 2¼ yard. 70 ton Bucyrus Steam Shovel, 2¼ yard. 70 ton Vulcan Steam Shovel, 2 yard. Little Giant Traction Steam Shovel, 1¼ yard. 50 ton Bucyrus Steam Shovel, 1¼ yard. Locomotives, Dump Cars, etc. Full line of Air Compressors. Quarry Steam Hoists, all sizes. All our goods we fully guarantee.

Send for our March booklet.

Willis Shaw Machinery Co.
171 La Salle St., Chicago, Ill.

FOR SALE.

2—75 ft. x 6 ft. hardening cylinders.
1—4-mold Chisholm, Boyd & White brick press; capacity 20,000 per day of 10 hours.
1—4-mold Chisholm, Boyd & White combination brick and block press; capacity 20,000 per day of 10 hours.
1—Rotary brick press; capacity 10,000 per day of 10 hours.
100—Brick cars; capacity 1,000 bricks. Also miscellaneous brick machinery. All new and in first-class condition. Will sell cheap.
Inspection invited.
Address

ARTESIAN STONE & LIME WORKS CO.,
313 Chamber of Commerce Bldg., Chicago, Ill.

CRUSHER FOR SALE

Austin Gyratory No. 7½. Left hand angle drive; in very best of condition. All inside moving parts and bushings are brand new. Shell, hopper and spider good as new. Full set of babbitting mandrels. Can be seen working every day. Address

LEHIGH STONE CO.
KANKAKEE, ILL.

FOR SALE CHEAP

Two new No. 66 Lindhart Kominuters; five No. 7 Schmidt Ball Mills; one No. 64 Lindhart Kominuter. No. 7 mills and No. 64 first-class condition. Address

COPLAY CEMENT MFG. CO.
Coplay, Pa.

GOOD CUTS

We make cuts of all kinds in one or more colors from photos, drawings, etc. Half-tones, electrotypes, wood cuts, zinc etchings, 3 color process plates, etc. "The right Cut for Every Purpose." Send for our Booklet. Glad to give expert advice gratis.

TO MAKE YOUR ADVERTISING APPEAL CONSULT
WESTERN ENGRAVING & COLORTYPE CO.
CHICAGO



THEW SHOVEL.

For Sale—No. 3, overhauled, first class shape. Also narrow and standard gauge locomotives. Address Southern Iron & Equipment Co., Atlanta, Ga.

THE BEAL CORE DRILL

The best, cheapest and most effective core drill for testing quarries, coal and mineral lands. Brings a solid core, from 2 to 4 inches in diameter to the surface, showing the different formations it passes through. Records of each hole furnished. Correspondence solicited.

Address

EDWIN S. BEAL, 214 Woodlawn Ave., Lansing, Mich.

PATENTS SECURED FOR INVENTIONS.

C. L. Parker, ex-examiner U. S. patent office, 956 G St., Washington, D. C. Write for inventor's handbook.

CEMENT ROCK PLANT SITE.

An unlimited amount of the very finest of cement material covering nearly 100 acres within 75 miles of St. Paul and Minneapolis and Duluth and Superior; the only deposit of the kind in the states of Wisconsin or Minnesota and on the main line of the Soo railroad and located in such a manner that all of the material can be handled by gravity from the quarry into the cars. An opportunity that is well worth looking into and one that can be secured cheaply. Address S. J. Wall, St. Croix Falls, Wis.

BLOCK MACHINE.

FOR SALE—One Standard Anchor Block Machine, new. Manufactured by Anchor Concrete Stone Co., Rock Rapids, Ia. Price \$100.00, cost \$150.00. Reason for selling, gravel pit gave out.

Address NOTERMANN & SON, Victoria, Minn.

MACHINERY FOR SALE.

1 No. 6 high pressure Sturtevant Blower (new).
4 No. 5 Style D Gates' Crushers (first class condition). This blower has never been used and is in first class condition. The rock crushers are second-hand but they are also in first class condition.
Address THE IOLA PORTLAND CEMENT COMPANY, Iola, Kansas.

My SPECIALTIES are Steam Shovels, Locomotives, Cars**For Sale:**

100 ton Vulcan Steam Shovel; new boiler.
70 C Bucyrus, \$6,000; Shop No. over 1000; nearly new.
5 Steam Shovels in Montana; good ones; 1-70 Bucyrus, 3 Little Giants, 1-70 ton Vulcan.
60 Marion; Shop No. near 1600.
15-20 ton Locomotive Crane, Industrial.
100-4 yd. K. & J. 36 in. gauge Dump Cars.
60 Western 36 in. gauge Dump Cars.

Special:

2-65 ton Marion Steam Shovels at \$3500 each; Kansas City or St. Louis delivery.
50-6 yd. (4 ft. 8½ in. gauge) Oliver Dump Cars.
80-5 yd. (4 ft. 8½ in. gauge) Western Cars.
40-6 yd. (4 ft. 8½ in. gauge) K. & J. Cars.
12, 14, 18 ton 36 in. gauge Dinkeys. What make do you want?
15x24 Saddle Tank and all other types of Standard Gauge Locomotives. Write for Prices on Anything Wanted not mentioned here.

FRED. A. PECKHAM, Suite 1122-3 McCormick Building, Chicago

Some Bargains in Quarry Equipment**COMPRESSORS**

One 16x16x18 McKiernan straight line compressor, capacity 600 feet of air. Ample for 6 to 10 drills. Ready for immediate use.
One Ingersoll-Sargent duplex, class H 12x12x14½. Capacity 635 feet of air. Almost new.
One Rand 12x12x16 straight line, capacity 250 cubic feet.

CRUSHERS

1 No. 3 Gates, Style D. Almost new.
1 No. 4 Gates, Style D. Fine condition.
1 No. 5 Gates, Style K. Good as new.
1 No. 5 Austin, with 60' elevator and rotary screen and power plant. Will sell all or split.
1 No. 6 Austin. Used one season.
1 No. 7½ Austin plant complete.
1 No. 8 Gates plant complete and a lot of elevators, screens, friction hoists, etc.

STEAM SHOVELS

Two 75-ton steam shovels, built especially for handling broken stone. Used less than one year; left the shop late in 1907. Great bargains for anybody who wants loading shovels.

We have several smaller shovels for stripping and other work.

LOCOMOTIVE CRANES

One 15-ton Interstate, with 44-foot boom, 1-yard clam shell bucket on standard gauge truck. Absolutely first class condition. Can be seen in operation.

One 10-ton Yale & Towne, 30-foot boom, no bucket. Absolutely first class condition.

Also have some others.

SCREENS, ELEVATORS, ETC.

We have a lot of standard Gates, Austin and other screens and elevators, friction hoists, and other hoisting appliances.

Be sure and write us for prices before you buy ANY KIND OF EQUIPMENT—SAVE YOU MONEY

MARSH COMPANY,

971 Old Colony Building,

CHICAGO, ILLINOIS

300% INCREASE OF ORDERS

STOP and THINK what the ORIGINAL VELTEN UNIVERSAL CRUSHER does—Work of Two Crushers. It Crushed the hardest Rock to Sand in One Operation or to passing any size ring. Price Is Less Than You Pay for Cheap Imitations.

FREE!—Write Today for Universal Concrete Facts—FREE!

EAGLE POINT LIME WORKS, Dubuque, Iowa, writes:

UNIVERSAL CRUSHER CO., Cedar Rapids, Ia.

Nov. 25th, 1910

Dear Sir: Yours of the 24th at hand. We installed a No. 2 Velten Universal Crusher as an auxiliary this year, and must say the Crusher has exceeded our expectations. It handles the rejections from a No. 5 GYRATORY with ease and do not know where we could have purchased a better Crusher for our purpose.

Yours truly,

P. S. You may use this letter as reference.

EAGLE POINT LIME WORKS, per L. M. Fingles, Sec.

Now you save Money, Trouble and Time. Write us for information and prices and we will promptly reply. Address

**Sales Office
508 F Ave. West**

UNIVERSAL CRUSHER COMPANY

CEDAR RAPIDS, IOWA

WE MANUFACTURE ELEVATORS, SCREENS, CONVEYORS—ANY STYLE AT REDUCED PRICES.

J. T. BROCK, Cement Contractor, Solon, Iowa, writes:

UNIVERSAL CRUSHER CO., Cedar Rapids, Iowa.

November 19th, 1910.

Gentlemen:—In March, 1910, I bought from your E. A. Velde a Velten Universal No. 3 Pattern 1910, and I can state it is a GOOD MACHINE. It has done all and a good deal more than I expected. I have not spent one cent for repairs, and after my season's work it is in as good condition as the day I started. It crushed the hardest rock with ease to any size down to ½ inch ring. It has a great capacity by a small amount of power. I am the man for good machines and the Velten Universal is my kind. You can use this for reference. It is the truth.

Yours truly,

J. T. BROCK

CLINTON METALLIC PAINT CO.

CLINTON, N. Y.

LARGEST AND OLDEST MANUFACTURERS OF

BRICK AND MORTAR COLORING

Be sure you get the genuine with the "Little Yellow Side-Label" on each package.

Let us tell you about Side-Walk Black.

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General Offices, Byrd Bldg., Memphis, Tenn.

Our Quarry Facilities are of the Best.

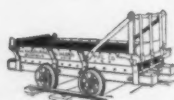
We build municipal street work, turnpikes and give attention to all construction work of a similar character. Our organization is backed by twenty-five years experience, and we are in a position to furnish specifications and estimates promptly. Individuals, Corporations or Municipal authorities are invited to correspond with us.

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LANCASTER, PENNA.

ROCK CRUSHING MACHINERY
BRICK-MAKING MACHINERY
CLAY-WORKING APPLIANCES
CEMENT BRICK MACHINERY
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SAND DRYERS, BRICK DRYERS, ETC.

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"K & J" CARS FOR QUARRIES

Are Heavily Built for Continuous Service.

The above car carries 3½ tons of stone; cubic capacity 42 ft.; gauge track 36 in. We build cars to any specifications to fit your work. Catalog 60-J.

THE KILBOURNE & JACOBS MFG. CO.

Plant and Gen'l Offices at COLUMBUS, O. NEW YORK 25 Broad St.

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Changes of Copy must be in this office by the Fifteenth of the month, if proofs are desired; if no proofs are required the desired changes can be made if copy is received by noon of the Nineteenth.

New Advertisements to insure proper classification, should be in this office by the Fifteenth of the month, but they can be inserted in the last form going to press if received by the Nineteenth. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

THE FRANCIS PUBLISHING CO., 355 Dearborn Street
CHICAGO, ILLINOIS

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Urschel Bates Valve Bag Co.
West Jersey Bag Co., The

BAG TYERS.

Miller & Co., Clifford L.

BALL MILLS.

Aising, J. R., Eng. Co.
Power & Mining Mch. Co.
Traylor Engineering Co.

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American Fabric Belting Co.
Chicago Belting Co.
Gandy Belting Co.
Main Belting Co.
Salsbury & Co., W. H.
Stephens-Adamson Mfg. Co.

BLAST HOLE LOADERS.

Cyclone Drill Co.

BRICK.

Harblson-Walker Refractories Co.

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Atlas Car & Mfg. Co.
Kilbourne & Jacobs Mfg. Co.
Sackett Screen & Chute Co., H. B.

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Sackett Screen & Chute Co., H. B.
Tesco Products Co.

CEMENT BRICK MCHY.

Bartlett, C. O., & Snow Co.
Martin-Henry Brick Machine Mfg. Co.

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Carolina Portland Cement Co.
Fowler & Pay.
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CEMENT MCHY.

Aising, J. R., Eng. Co.
Cummer, F. D., & Son Co.
Kent Mill Co.
Power & Mining Machy. Co.
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Smith & Co., F. L.
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Allentown Portland Cement Co.
American Cement Co.
Alpha Portland Cement Co.
Atlas Portland Cement Co.
Atlantic and Gulf Portland Cement Co.
Carolina Portland Cement Co.
Chicago Portland Cement Co.
Comstock Lime & Cement Co.
Copley Cement Mfg. Co.
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Dexter Portland Cement Co.
French, Samuel H., & Co.
German American Portland Cement Works.
Hartman, Wm. G., Cement Co.
Kansas City Portland Cement Co.
Kirkpatrick Sand & Cement Co.
Ironton Portland Cement Co.
Lehigh Portland Cement Co.
Marquette Cement Mfg. Co.
Mecham & Wright Co.
Maryland Portland Cement Co.
Northwestern States Portland Cement Co.
Owl Portland Cement.
Phoenix Portland Cement Co.
Security Cement & Lime Co.
Southwestern States Portland Cement Co.
Standard Portland Cement Co.
Superior Portland Cement Co.
Union Sand & Material Co.
Universal Portland Cement Co.
Wabash Portland Cement Co.
Wolverine Portland Cement Co.
Woodville Lime & Cement Co.

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Buckeye Fire-Clay Co.

CLAYWORKING MCHY.

American Clay Working Mch. Co.
Bartlett, C. O., & Snow Co.
Cummer, F. D., & Son Co.

CONCRETE BLOCK MCHY.

Anchor Concrete Stone Co.
Century Cement Mch. Co.
Chicago Structural Tile Co.
Concrete Form & Engine Co.
Concrete Stone & Sand Co.
Hobbs Concrete Machinery Co.
La Grange Specialty Co.
Marsh Co.
Multiplex Concrete Machinery Co.
Northwestern Steel & Iron Works.
Perfection Block Mch. Co.
Peerless Brick Machine Co.
Pettyjohn, The, Co.
Sioux City Cement Mch. Co.

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Cement Tile Mch. Co.
Chalmers & Williams.
Kent Mach. Co.
Marsh Co.
Northwestern Steel & Iron Works.
Standard Scale & Supply Co.
Williams Contractors Supply Co.

CONCRETE BEADS.

Carolina Portland Cement Co.

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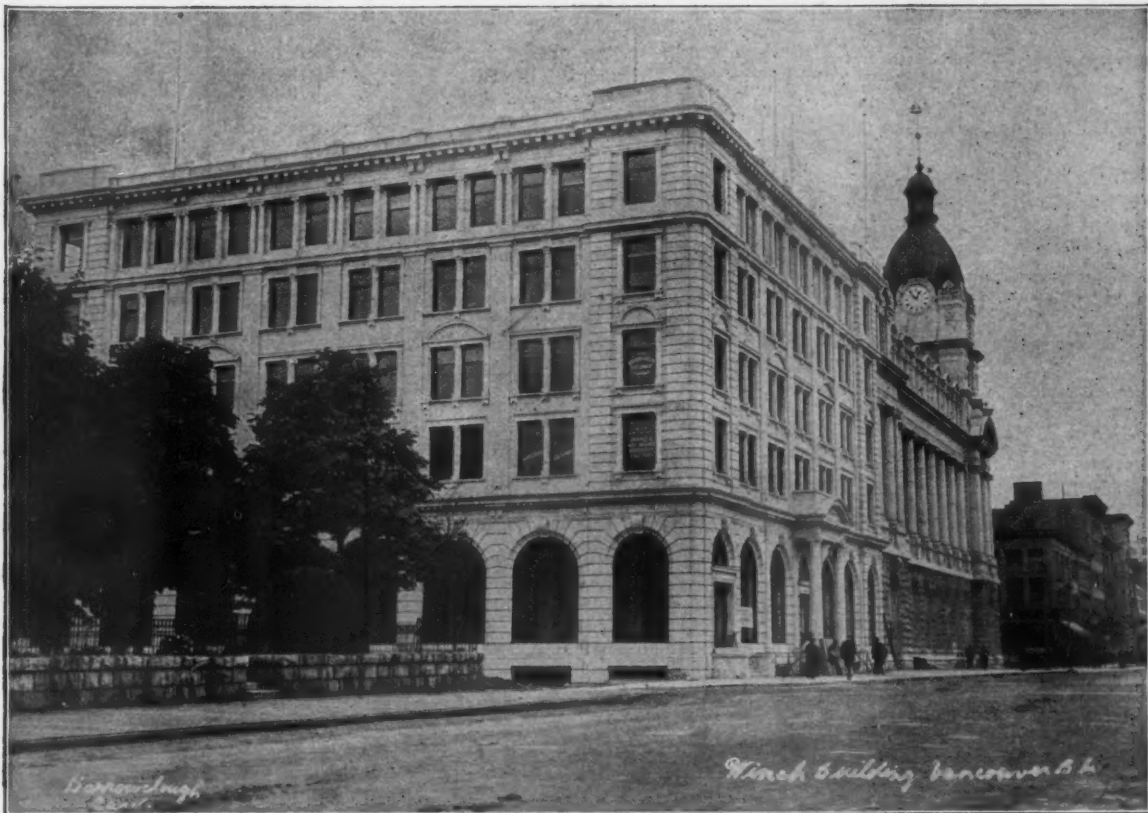
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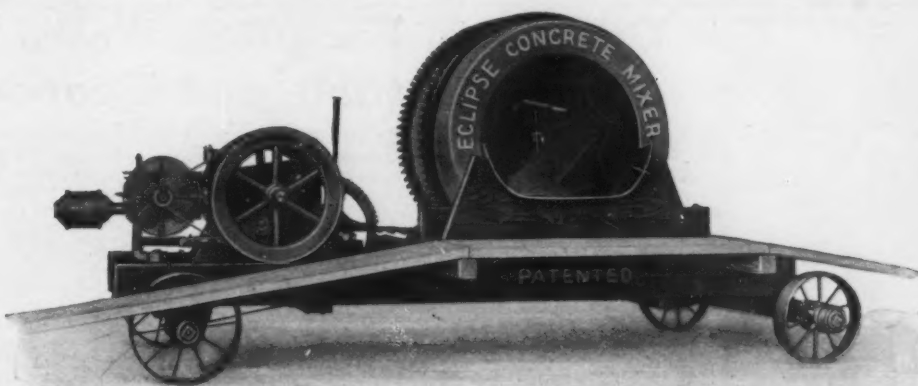
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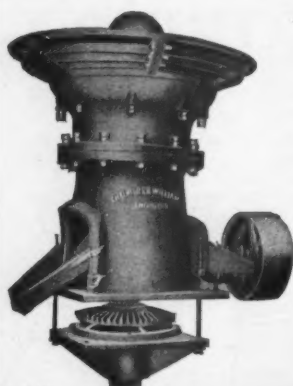
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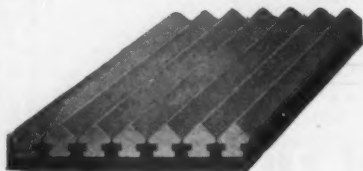
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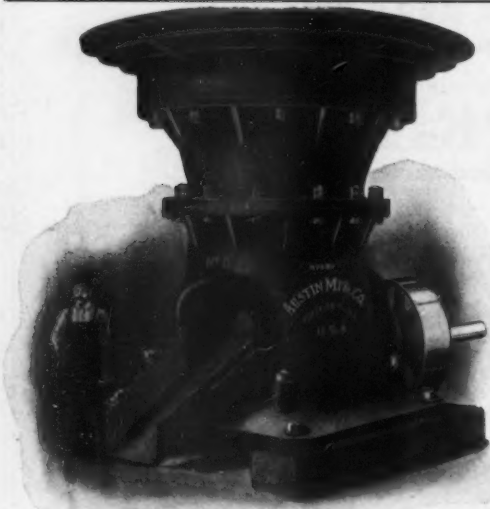
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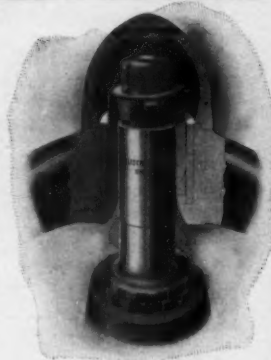
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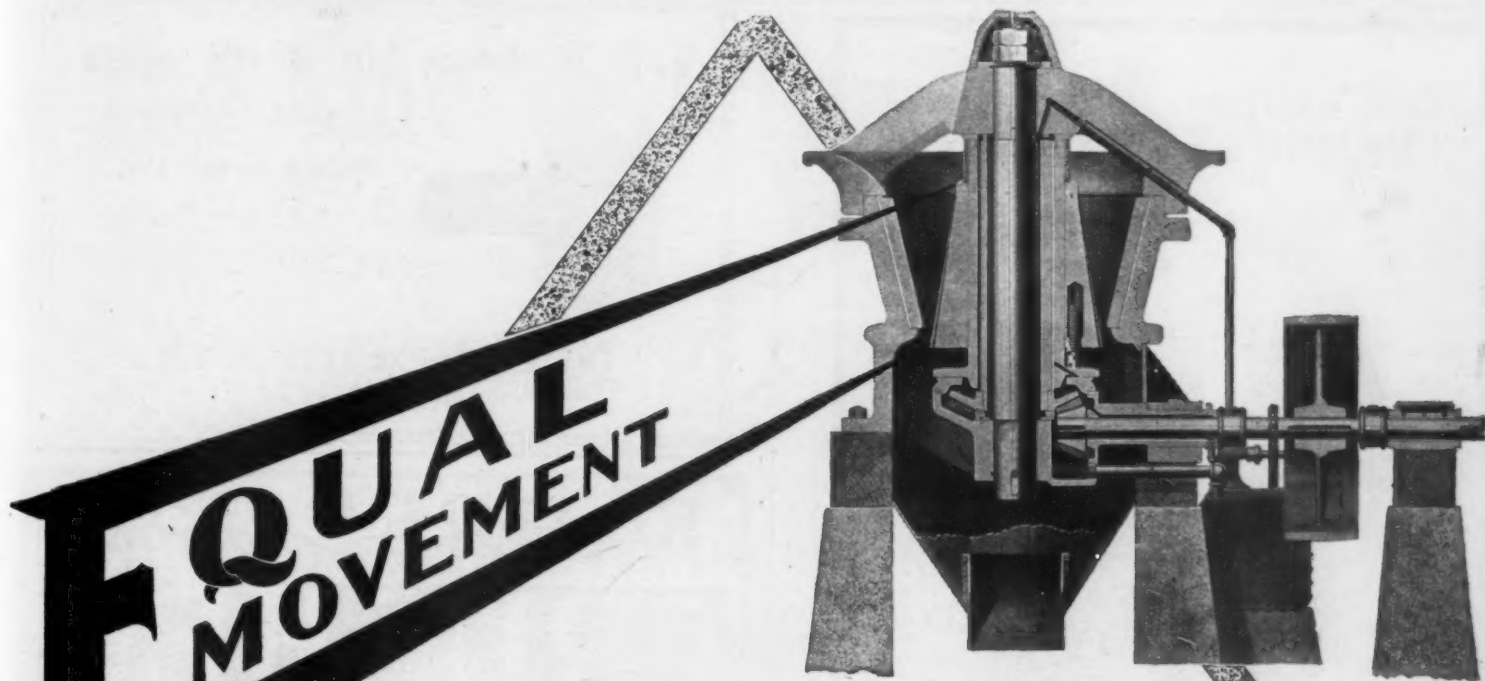
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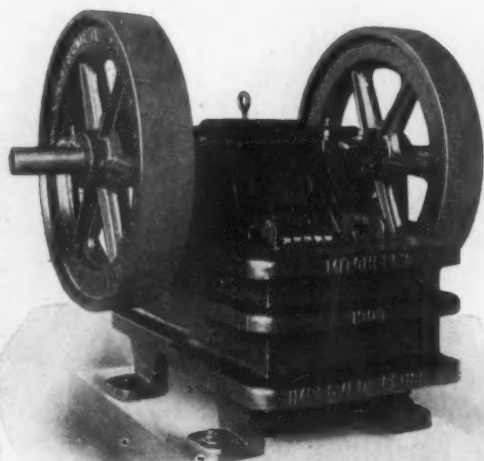
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It weighs only 6,000 pounds, re-
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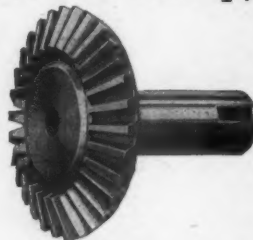
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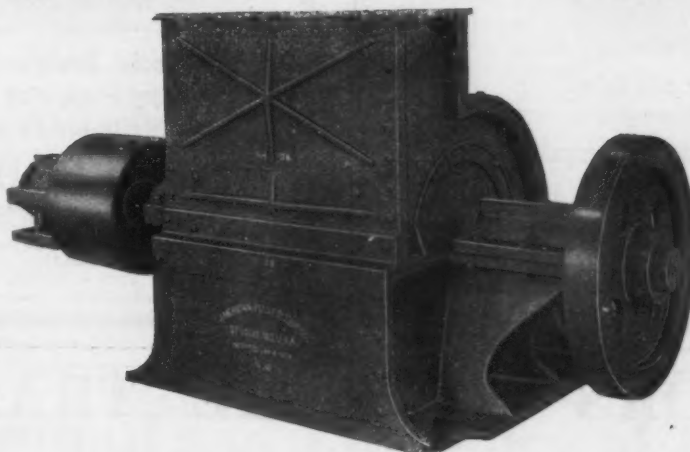
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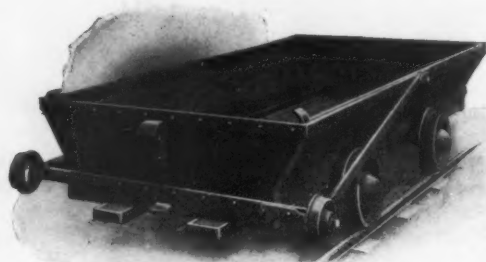
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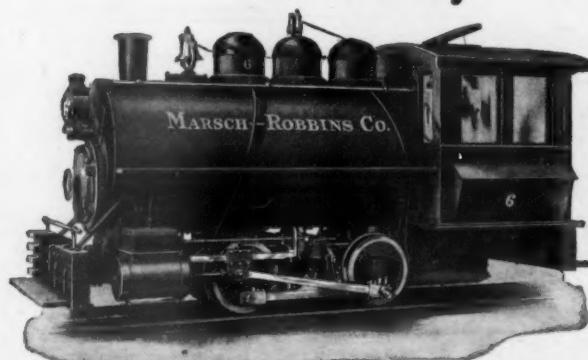
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Myron C. Falk. Price \$2.50.
- Reinforced Concrete**
W. H. Gibson and W. L. Webb. Price \$1.00.
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F. B. Gilbreth. Price \$5.00.
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Anson Marston. Price \$1.00.

ROCK PRODUCTS, 355 Dearborn Street, CHICAGO

Tell 'em you saw it in ROCK PRODUCTS

DO IT NOW!

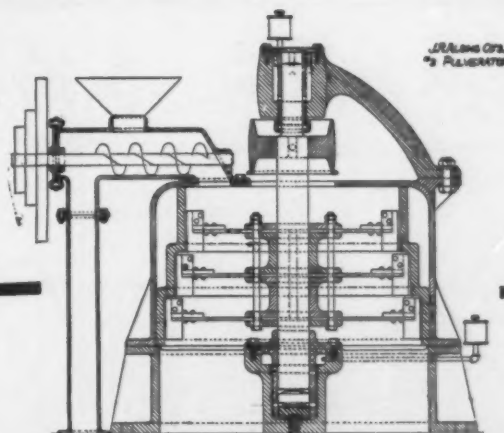
The time to look over your equipment is now—to-day! Better see that everything is in shape for the spring rush. "Shut-Downs" later will be expensive.

TISCO

Manganese Steel

Crusher parts insure freedom from breakage and the greatest resistance to wear. Don't wonder whether it's so or not, a trial convinces.

Taylor Iron & Steel Co.
High Bridge, New Jersey



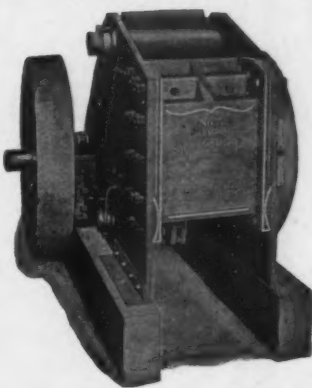
THE ALSING PULVERATOR No. 2

These machines are designed for very fine grinding and will reduce the material from a 2½ inch size to an impalpable powder. The grinding is done by the percussion principle instead of abrasion, etc., as in other makes. These Pulverators have demonstrated by actual use a great saving in cost of wear, tear, and maintenance. Simple in construction with fewer intricate parts to get out of order. They are so substantially constructed they will last a lifetime.

The J. R. Alsing Engineering Co.
INCORPORATED
30 WEST STREET, NEW YORK

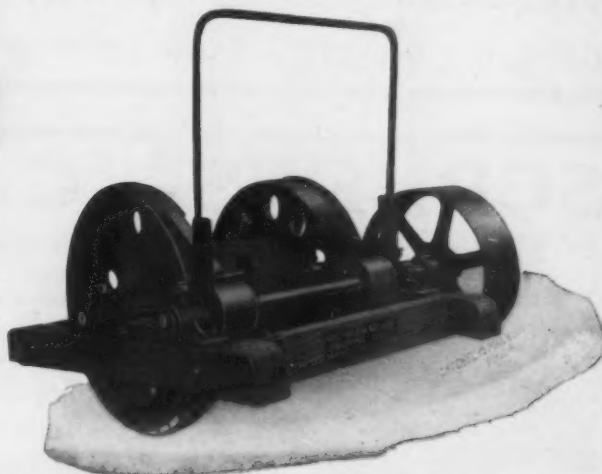
Increase the Output and Efficiency of Your Quarry

By using CHAMPION Rock Crushers, Elevators, Screens, Dump Cars, Hoisting Drums, Wire Cable, Conveyors, Bin Chutes, Engines and Boilers. Everything for the quarryman furnished at right prices. Our Dump Cars are Durable and Economical. Made in two sizes.



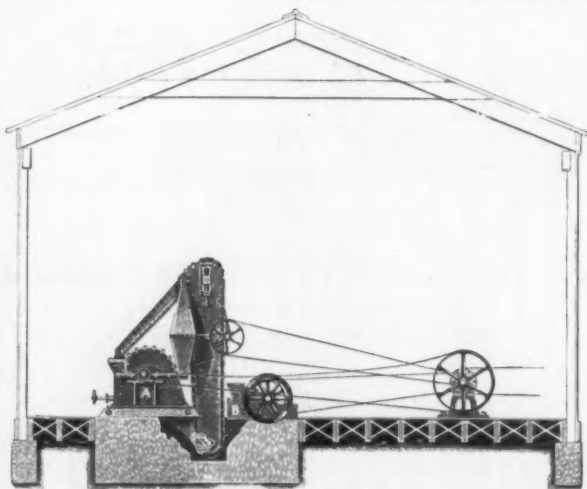
Champion Steel Rock Crushers are made in six sizes, from 75 to 600 tons daily capacity. We design and equip quarry plants of any capacity. Our Crushers do more work at less cost for repairs than any others. Catalog will interest you.

Count on quality when you consider Champion Quarry Machinery. We aim to furnish nothing but the best. Our winding drum is a low-priced, durable and economical appliance for drawing material from the quarry to the Crusher. Powerful and always to be depended upon.



The Good Roads Machinery Company, Kennett Square, Pa.

Tell 'em you saw it in ROCK PRODUCTS



Stationary Plant

Don't throw your Limestone Screenings in the Dump!

Make Limestone Fertilizer of same.

There is now a demand for this material; why not turn screenings into MONEY?

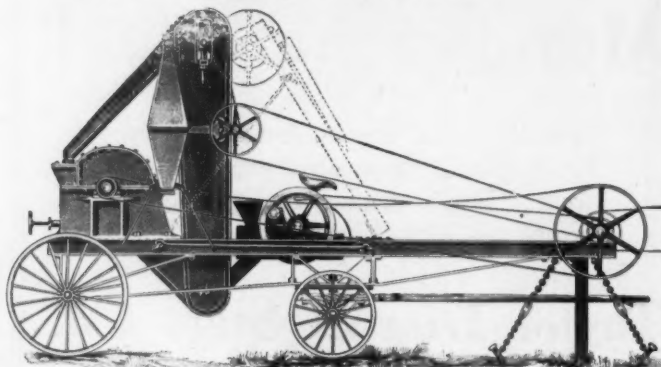
WE Furnish Complete Plants of Any Capacity Desired.

We have 25 plants now in operation.

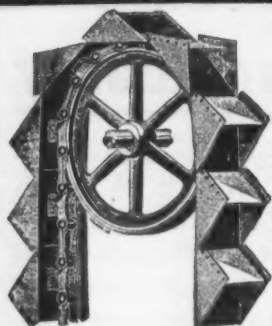
WRITE FOR BULLETIN NO. 4

The Williams Pat. Crusher & Pulv. Co.

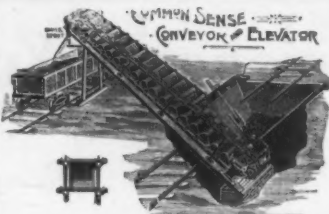
ST. LOUIS: 2705 N. Broadway
CHICAGO: Old Colony Bldg.
SAN FRANCISCO: 428 Monadnock Bldg.



Portable Plant



Send for Catalog 25

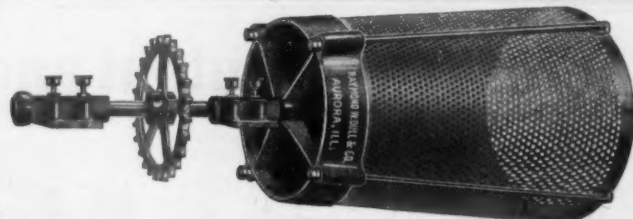


THE GENERAL CRUSHED STONE CO.,

So. Bethlehem, Pennsylvania,

have been using one of our Common Sense Elevators for six years—capacity 400 tons an hour.

THE C. O. BARTLETT & SNOW CO. CLEVELAND OHIO



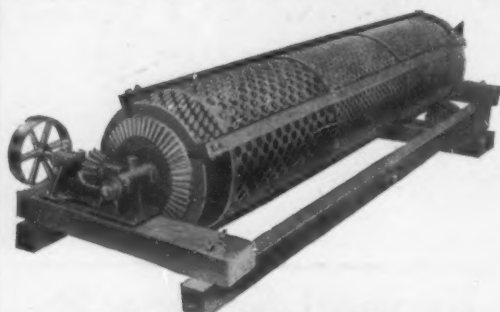
Dull's Improved Conical Screen

WE DESIGN AND CONSTRUCT COMPLETE SAND AND GRAVEL WORKING PLANTS

We invite correspondence—Send us full particulars

RAYMOND W. DULL & COMPANY
AURORA, ILL.

SCREENS --- CARS --- ELEVATORS



Send for Our Catalog No. 31-R

If you want anything for your quarry or gravel pit let us give you our figures. We will quote you right prices, prompt deliveries, and if you favor us with your order furnish goods that will more than please you

Portable
Track
Turn
Tables



Elevator
Buckets



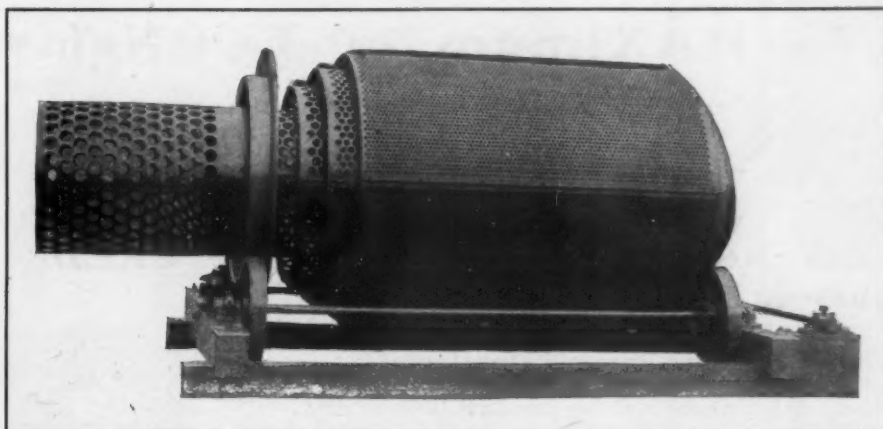
Give us a chance
Others have and
are glad they did

SACKETT---CHICAGO

1679 ELSTON AVE.

Tell 'em you saw it in ROCK PRODUCTS

JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman, is the

ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars, address:

JOHNSTON & CHAPMAN CO.

Corner Francisco and Carroll Ave., Chicago, Ill.

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

"Pikes Peak or Bust"

Fifty years ago this was the slogan of the westward ho throng—and many were they that "busted." Same way today with dump wagons. There is a lot of real human nature in wagons. Here you see one "busted" before its life journey should be half over. Over there you see another plugging along, full of grit—literally so—and never a creak or a crack. And if you take another look at it, ten to one it's a Troy.

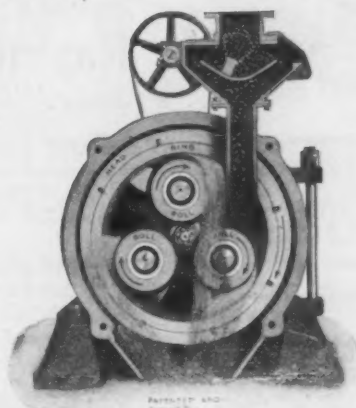


You can tell it's a Troy by the tube—that tubular shaft along the side of the wagon box. Other dump wagons have chains or the like instead of that tubular shaft. Study the next Troy you see in use, and see how one bottom door closes in advance of the other, giving a lap that seals it against leakage. Send for Catalog No. 2-P and study the other reasons why the Troy gets to its Pikes Peak without "busting."

The Troy Wagon Works Co.
101 East Race Street, Troy, Ohio

Quick Delivery for All Territories from Warehouse Stocks in Principal Trade Centers of United States and Canada.

Sturtevant Ring-Roll Pulverizer



For Coarse or Fine Grinding

No Fans, Plows, Scrapers, Pushers, Shields or Screens, to wear out and take unnecessary power.

Only Four Wearing Parts — (Ring and 3 Rolls.)

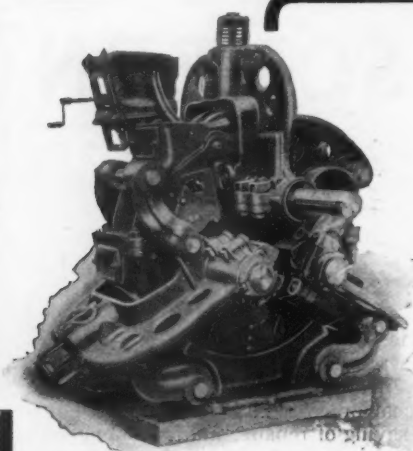
Replacing these make an old mill new. These wear from 6 to 18 months

Submit your Crushing and Grinding problems to us — We make many kinds of Crushers, Rolls, Pulverizers and Screens

SEND FOR CATALOGUE

Sturtevant Mill Co., Boston, Mass.

Tell 'em you saw it in ROCK PRODUCTS



MAXECON

Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

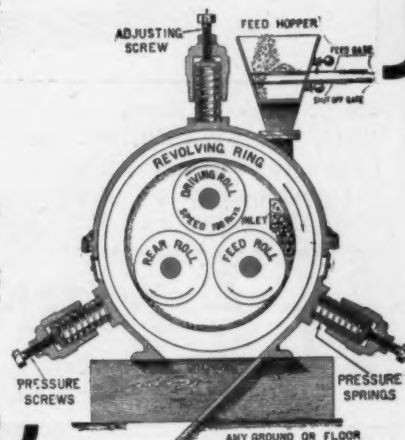
THE RING WOBBLER

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

170 BROADWAY, NEW YORK CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



For Grinding Limestone

We Guarantee that

One Raymond Mill with Air Separator

will deliver at point of storage

3½ Tons per hour---98%, 200 mesh.

Think what that means. Compare it with the capacity of other mills.

The nearest approach to this capacity that we find claimed by other mills is

2½ Tons per hour

and that is merely for the actual grinding in the mill. It does not include separating or delivery of the finished product to point of storage, which must be accomplished by additional expensive machinery which is entirely eliminated in the Raymond System. The Raymond System does it all.

Furthermore, 3½ tons per hour is our conservative guarantee. As a matter of fact, where the material is favorable, the Raymond System can deliver and is actually delivering, a finished product at the rate of

6½ Tons per hour---92%, 200 mesh.

We can demonstrate to any cement manufacturer that he is losing money if he is not using the Raymond System for grinding his raw material and coal.

This is a big statement and we make it with a full realization of its gravity and importance to the Cement Industry.

We can "make good" on this statement.

Do you want us to "show you?"

Raymond Brothers Impact Pulverizer Co.

517 Laflin Street, Chicago

Tell 'em you saw it in ROCK PRODUCTS

MACHINERY

—FOR—

Industrial Plants



We manufacture machinery for transmitting power, and for elevating and conveying materials in and about cement plants, rock crushing plants, lime plants, mortar works, plaster works, and other industries.

We manufacture screw conveyors, belt conveyors, and all sorts of chain and cable conveyors, for handling rock, lime, sand, etc.

We manufacture elevators, also, for handling the same kinds of material. Our lines include shafting, couplings, bearings, collars, pulleys, gears, rope sheaves, sprocket wheels, elevator buckets and bolts, steel elevator casings, etc.

We have our own foundry, sheet metal department and machine shop. We employ first-class help in all departments and use high-grade materials.

When you are in need of anything in our line, try us.

Catalog No. 34

H. W. Caldwell & Son Co.

17th St. and Western Ave., Chicago

Fulton Bldg., Hudson Terminal, No. 50 Church St.
NEW YORK CITY

Rubber Belting Troubles Overcome

Every difficulty heretofore met with in the use of rubber belting entirely eliminated in

"R. F. & C." (Rubber Filled and Covered) Solid woven rubber belting.
Ask us for sample and further information.

W. H. SALISBURY & CO., Inc.

Est. 1855

166-168 Wabash Ave., Chicago, Ill.

GANDY as a MAIN DRIVE



We hear from one customer that he has three Gandy belts in operation—a 30 inch and a 27 inch have been running for 14 years. Another 30 inch has been running for 20 years, all giving perfect satisfaction.

Here's another who has used a Gandy 20 inch 8 ply belt as a main drive continuously for 18 years. He says this belt was frequently run 24 hours a day, has given the best of service, and is still in excellent condition.

There is no better proof of what "The Gandy Belt" will do for you than to tell you the actual experiences of Gandy users, and we've gotten a whole lot of these together in a free booklet, "Experiences with The Gandy Belt", which we want to mail to you if you'll send us your name and address.

The Gandy Belt will save you money. It is the most serviceable belt for Driving, Elevating and Conveying purposes, while it costs only as much as Leather Belting and 25% less than Rubber Belting.

There is only one Gandy Belt, and it is made by The Gandy Belting Company of Baltimore, Md. Look for the brand "The Gandy Belt" and for our trade-mark, a roll of Belt and a bale of Cotton. Shall we send you our free booklet?

The Gandy Belting Company
744 West Pratt Street, Baltimore, Md.

New York Office: 88-90 Reade St.

LEVIATHAN BELTING

is to be found in use
in practically every
important stone
crushing and sand
and gravel plant of
the United States, and
on sale by

MAIN BELTING CO.

PHILADELPHIA

CHICAGO

NEW YORK

BOSTON

PITTSBURG

MONTREAL

SEATTLE

"You can do without LEVIATHAN, but you
cannot do so well."

THE AMERICAN
ASPHALT PAVING COMPANY
CHICAGO

December 9, 1910.

The American Fabric Belting Co.
29 Michigan Avenue,
Chicago, Illinois

Gentlemen:

Replying to your inquiry as to our experience with "Nestor" belts, we beg to say that the 16" Nestor running on our asphalt mixer is giving us remarkable service.

This belt drives this machine without any slippage or loss of power, and does much better work than the leather belts which we used before.

We are also using "Nestor" for transmission purposes in other parts of our plant with excellent results.

Yours truly,
THE AMERICAN ASPHALT PAVING COMPANY

E. J. Schumacher
Superintendent

"NESTOR"

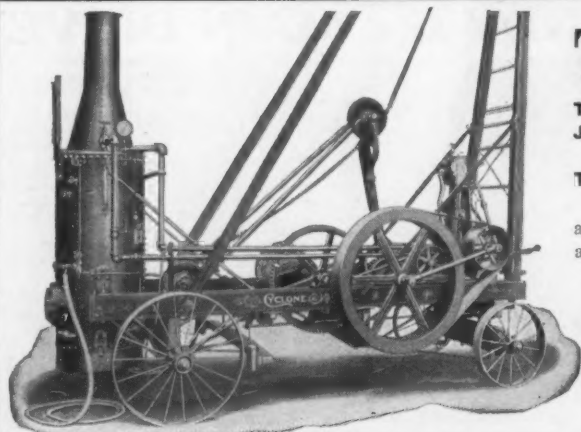
SOLID WOVEN WATER-PROOF BELT

Runs as true as an arrow. Clings to the pulley. Does not slip. Remains pliable. Does not shrink. Has but little stretch. Is unaffected by surroundings. The RESULT is MAXIMUM EFFICIENCY, which, combined with REASONABLE FIRST COST means ECONOMY. Write for "NESTOR FACTS."

AGENTS IN ALL PRINCIPAL CITIES

The American Fabric Belting Company
Cleveland, Ohio

Tell 'em you saw it in ROCK PRODUCTS.



The Cyclone Wins Again

THE CONSTANT WINNING OF CONTESTS BY THE CYCLONE DRILLS DOESN'T JUST HAPPEN—there is a reason for it.

The **CONSTRUCTION**, **MATERIAL** and **PRINCIPLE** which enter into these drills are **THE REASONS**.

The test completed in the quarry of the U. S. Crushed Stone Company, at McCook, Illinois again demonstrates the superiority of the Cyclone drill from point of speed and maintenance; it adds another link in the chain of evidence that Cyclone drills are built right and run right.

This is the reason why the U. S. and Canadian Governments, as well as the largest quarry people and railroad contractors, buy Cyclones.

WRITE US TO-DAY—DEPT. "20"

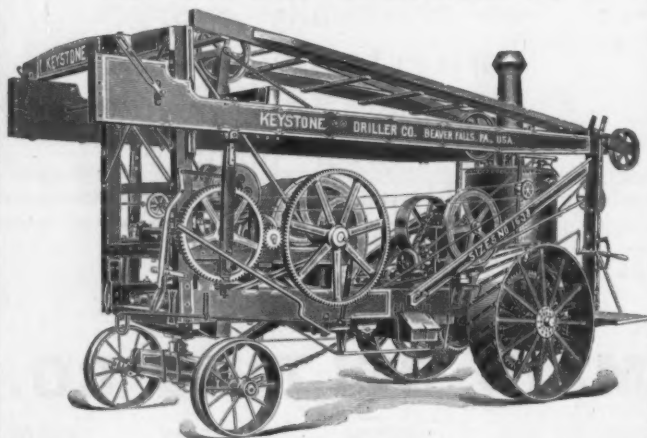
THE CYCLONE DRILL COMPANY,

ORRVILLE, OHIO

CHICAGO OFFICE—419 Fisher Bldg.

NEW YORK OFFICE—1456 Hudson Terminal Bldg.

For Big Blast Holes KEYSTONE CABLE DRILLS



Catalog No. 4

Keystone Traction Drill Co.

Monadnock Bldg.,
CHICAGO

BEAVER FALLS, PA.,
170 Broadway, New York

CARTHAGE,
MISSOURI



95-C IN SANDUSKY PORTLAND CEMENT COMPANY'S QUARRY

Bucyrus Shovels Are Loading Crushed Stone and Digging Blasted or Unblasted Cement Rock in the Leading Quarries in the United States.

THE BUCYRUS CO.

Branch Offices:
NEW YORK
SAN FRANCISCO
CHICAGO
DENVER
SPOKANE

P. O. Box T
South Milwaukee, Wis.



Deep Blast Hole Drilling

Is accomplished more economically than by any other method with the

"American" Drilling Machines

There is 40 years' experience behind these drills—they are standard. Where electric power is available, equipped with motor they form the most portable and economical drill for quarry use.

Equipped with any power they are backed by the experience and reputation of the world's oldest and largest builders of this kind of drilling machinery.

Tell us your blast hole requirements. We have 59 regular styles and sizes of machines for your selection, made in types to meet every possible condition of work. Write for our new catalog No. 105, the most complete "Drill-Hole" catalog ever issued.

THE AMERICAN WELL WORKS

General Office and Works: AURORA, ILL., U. S. A. Chicago Office: First National Bank Building

Tell 'em you saw it in ROCK PRODUCTS

Marion Steam Shovels for Rock Excavation

These shovels have been thoroughly tested and proven in all kinds of cement and rock work. They handle this work most efficiently and economically. Write us and find out for yourself just how they do this.



For the heaviest work, our large shovels best meet requirements. For moderate outputs, our smaller shovels are best adapted. Our Revolving Shovels are most popular where the output is limited, and economy is a vital consideration.

Ours is the largest plant in the world manufacturing Excavating Machinery exclusively.

Let us figure with you before you order that new steam shovel!

STEAM SHOVELS ELECTRIC SHOVELS REVOLVING SHOVELS SCRAPER BUCKET EXCAVATORS

The Marion Steam Shovel Company, Marion, Ohio

Chicago: 1442-3 Monadnock Block.

New York: 50 Church St.

Montreal: F. H. Hopkins & Co.

VULCAN HEAVY-DUTY SHOVELS



CLASS D 85-TON SHOVEL LOADING BLASTED ROCK FOR LAURIN & LEITCH, MONTREAL, QUEBEC.

Are especially designed for heavy excavating. They will handle blasted and unblasted rock and stand up to the work.

Most simple, durable, economical and fewer repairs.

Six sizes: 45 to 120 tons, $1\frac{1}{2}$ to 5 cubic yard dippers.

Also the well-known Little Giant Shovel: 32 tons, $1\frac{1}{4}$ cubic yard dipper.

Revolving Shovels—three sizes: 15 to 40 tons, $\frac{1}{2}$ to $1\frac{1}{2}$ cubic yard dippers.

All shovels equipped for either steam or electric power.

FULL INFORMATION ON REQUEST

THE VULCAN STEAM SHOVEL CO. Toledo, Ohio

50 Church Street, New York

Tell 'em you saw it in ROCK PRODUCTS

Plaster Quality

The highest perfection in the
production of plaster
has been reached
by the

Dakota Plaster Company



Why?
Listen:

The Dakota Plaster Company's deposits are 98 per cent Pure Gypsum. Its plant, built in 1910, was erected without regard to cost, and is one of the best equipped and latest improved plaster mills in the world.

The Dakota Plaster Company
Black Hawk and Rapid City, S. D.

ART STONE COMPANY

WAYNESBORO, PA.

AMOS STOUFFER, Supt.

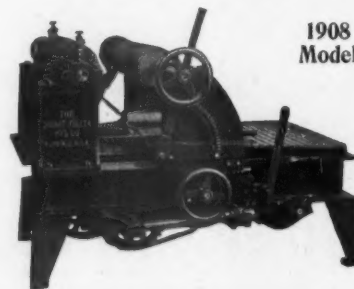


HIGH CLASS [CONCRETE PRODUCTS

CEMENT ART WORK

Write for Pamphlets to Concrete Workers on
CONFIDENTIAL Trade Notes

The Shuart-Fuller Improved Fiber Machine



1908
Model

Has an automatic, proportional, increasing feed, which keeps grade of fiber uniform from start to finish, and holds machine to highest possible rate of production for the grade of fiber and number of saws. Does not begin with fiber and end with dust, nor fall off in rate of production on each log, from 40 to 80 per cent as do the ordinary non-increasing feed machines. Works logs up to 24x24 inches. No royalty string attached to sale. Pay no attention to misrepresentations of our competitors, but write for descriptive circular and terms to

The Shuart-Fuller Mfg. Co.
ELYRIA, OHIO

THE SHUART-FULLER CO., Elyria, Ohio.

Gentlemen:—We are just in receipt of advice from our New Mexico plant wherein they state that the Wood Fiber Machine recently shipped by you is doing all that we have asked of it and running very fine.

ACME CEMENT PLASTER CO.
By Jas. R. Dougan, Sec.

St. Louis, June 17, 1907.

KING'S WINDSOR CEMENT FOR PLASTERING WALLS AND CEILINGS

Buffalo Branch, CHAS. C. CALKINS, Manager
322 W. Genessee Street.

Not the hardest, but the toughest and best Wall Plaster made—Can be applied with less labor. Has greater covering capacity than any other similar material

J. B. KING & CO., 17 State Street, New York.

Robert W. Hunt Jno. J. Cone Jas. C. Hailstead D. W. McNaugher

ROBERT W. HUNT & CO., Engineers

Bureau of Inspection, Tests and Consultation

New York—90 West St. Chicago—1121 The Rookery. Pittsburg—Monongahela Bank Bldg.
London, E. C., Eng.—31 Norfolk House. San Francisco—425 Washington St.
Montreal—Can. Exp. Bldg. St. Louis—Syndicate Trust Bldg. Mexico City, Mex.—20 San Francisco St.
Tests and Inspection of Cement—Reinforcing Steel and all Cement Materials and
Products—Supervision of Construction and Tests of Concrete Structures—Reports on
Cement Properties and Existing Concrete Structures—Design of Cement Plants and
Inspection of Cement Machinery—Chemical and Physical Testing Laboratories
"All Manner of Tests on all Classes of Material"

THE FULLER ENGINEERING CO.

DESIGNING, CONSTRUCTING AND OPERATING
ENGINEERS ANALYTICAL CHEMISTS

CEMENT MILLS A SPECIALTY

OFFICES: ALLENTOWN NAT. BANK BLDG. ALLENTOWN, PA.



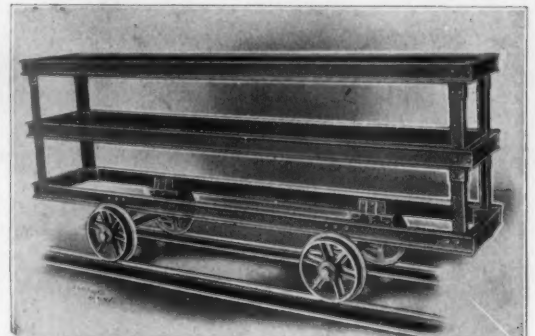
"KENT" CONTINUOUS MIXER

"The Mixer that measures
and Mixes"

"You fill the Hopper, the
Mixer does the rest"

Simple, reliable, economical, durable
and moderate in price

Write for Catalogue and Prices to
The Kent Machine Co.
306 N. Water St., Kent, O.



The "KENT" Block Cars, Transfer Cars, etc.

Tell 'em you saw it in ROCK PRODUCTS

Williams Raw Material Grinders



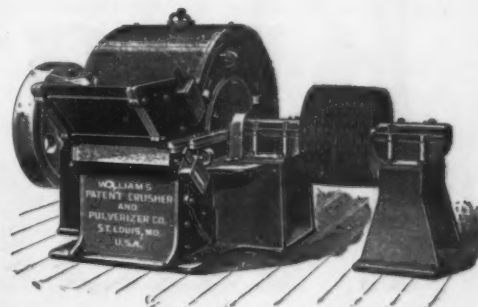
The "New Williams" Universal, our fine grinder, is used for preliminary work ahead of the Tube Mill, capacity No. 3 size, 800 bbls. in 22 hours, 95 per cent. through 20 mesh, with 40 to 50 horse power.

Also used extensively for fine grinding on Gypsum, Lime, Coal and Shale.

The "Vulcanite" Mill, our coarse grinder, prepares raw material ahead of Roller Mills. The No. 3 size has a capacity of 20 tons per hour, fineness, $\frac{1}{2}$ -inch, $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch, horse power 40 to 45.

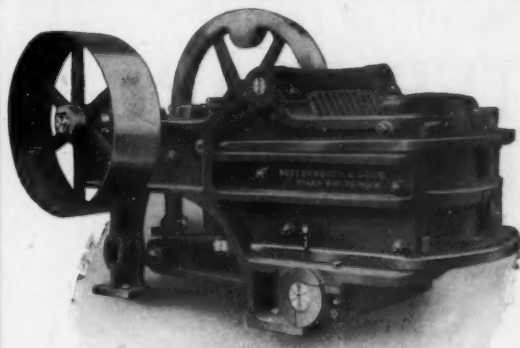
1700 machines now in use.

Bulletin No. 12 gives further details.



The Williams Patent Crusher & Pulverizer Co.

Works: 2701 North Broadway, St. Louis, Mo.
Sales Office: Old Colony Building, Chicago
San Francisco Offices: 428 Monadnock Building



Nippers—made in 3 sizes.

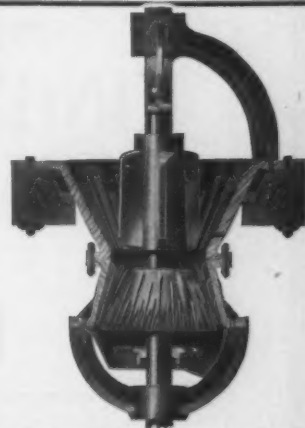
Jaw and Rotary CRUSHERS

For all Rocks and Ores Softer than Granite

GYPSUM MACHINERY — We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

Special Crusher-Grinders for Lime

Butterworth & Lowe
17 Huron Street, Grand Rapids, Mich.



Crackers—5 sizes—many variations.

GET THE BEST Finest Line of Gypsum Machinery

MADE

KETTLE CRUSHER NIPPERS

ASK FOR CATALOG OF

MOGUL NIPPERS. OPEN DOOR POT CRUSHERS

Best Mills in the United States Have Them

MCDONNELL BOILER & IRON WORKS, Des Moines, Iowa, U. S. A.

"Formerly Des Moines Mfg. & Supply Co."

Tell 'em you saw it in ROCK PRODUCTS

Improved
Modern
Lath



Fire-Proof
Insulating
Sound-Deadening

King's Fibrous Plaster Board

Standard Size 32' x 36'

THE RESULT OF "TRADE DEMANDS"

STRENGTHENED to stand the GREATEST STRAIN to which such material is subjected
TOUGHENED to a woody consistency to stand NAILING AND HANDLING

SHIPMENTS made to dealers of STRAIGHT OR MIXED CAR LOADS

KING'S FIBROUS PLASTER BOARD

CALCINED PLASTER
MOULDING PLASTER
FINISHING PLASTER
WOOD FIBRE PLASTER
NEAT WALL PLASTER
SANDED PLASTER
MARBLE DUST

PLASTER BOARD NAILS

SERVICE The location of our works at the greatest railroad terminus in the East and our several warehouses enable us to make **Prompt Shipments at all times.**

J. B. KING & CO.

Plaster Board Department:
17 State Street, New York, N. Y.
161 Devonshire St., Boston, Mass.

WAREHOUSES:
Boston, Mass. Providence, R. I.
Chester, Pa. Hartford, Conn.
Norfolk, Va. Buffalo, N. Y.
Brunswick, Ga.

WORKS:
New Brighton, Staten Island,
NEW YORK

Tell 'em you saw it in ROCK PRODUCTS

Stucco Retarder

Strong
Uniform
Fine Ground

RETARDER

We are the oldest Retarder firm in the United States, and above is our motto. New fire-proof plant and prompt service.

FREE SAMPLE ON REQUEST

Chemical Stucco Retarder Co.

WEBSTER CITY, IOWA.

INCORPORATED 1895

CUMMER CONTINUOUS PROCESS

FOR

**CALCINING
GYPSUM**

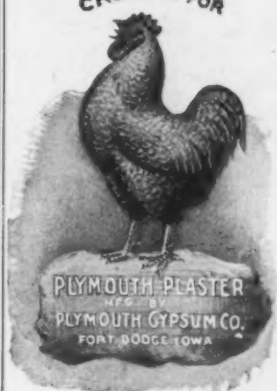
NO KETTLES
USED

PLANTS IN
OPERATION

Great Saving in Cost of Manufacture and Quality of Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

CROWING FOR



**PLYMOUTH
CEMENT**

AND

**WOOD FIBER
PLASTER**

The Brand that's Made from Pure
Gypsum Rock

WRITE US FOR PRICES AND
ADVERTISING MATTER

Plymouth Gypsum Co.

Fort Dodge, Iowa

Stucco Retarder

With increased sales for 1910 over previous years and not a single complaint would indicate that we have enjoyed the patronage of satisfied customers.

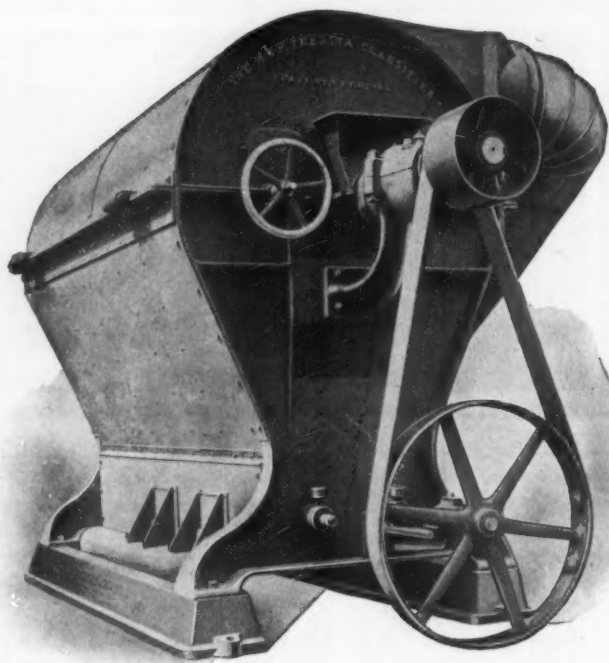
**Quality, Strength, Uniformity, Fineness, of Product
and Prompt Shipments are Guaranteed and Assured
from the Old Reliables**

The Ohio & Binns Retarder Co.

Plants at Webster City, Iowa; Port Clinton, Ohio

 We anticipate a change in firm name, which will be announced in the next issue, but it will be the same old faces and the same old places.

Tell 'em you saw it in ROCK PRODUCTS



PATENTS PENDING

FEW FACTS

ABOUT

The Morscher-Ehrsam Inertia Classifier

Adjustable for making separations from 80 mesh to 200 mesh.

Intake capacity from 5 to 10 tons per hour

Separations as positive as can be made on screens, with no perceptible variations in product owing to the variations of the speed or load.

Requires no more space than a Reel or Screen and the capacity is 20 times as great.

Material can be spouted direct from elevator head into machine.

No dust collectors or air spouts required.

We recommend its use in connection with gradual reduction on all classes of material where fine product is required. *{Write for more information.}*

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens, Hair Pickers, Wood Fibre Machines, Calcining Kettles, Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

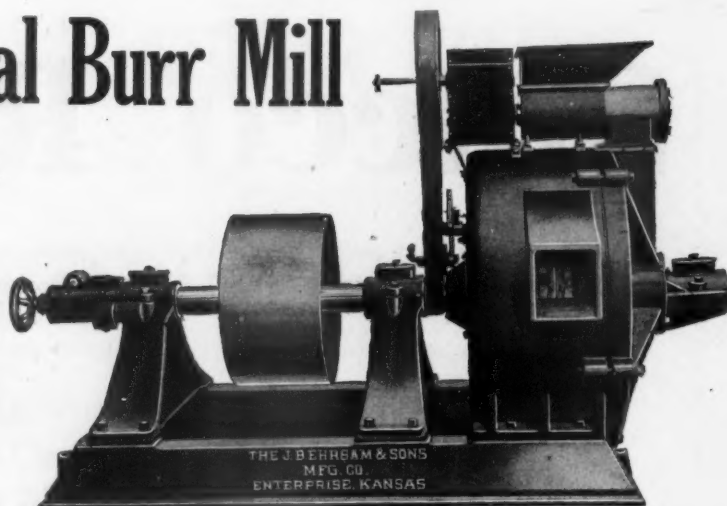
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is STRONG and DURABLY built.

Has INTERCHANGEABLE STONES, which can be easily removed for dressing and replaced.

Is provided with our POSITIVE CONTROLLABLE FEEDER, which feeds an absolutely uniform stream into the mill at the required capacity.

MANY OTHER
ADVANTAGES.



The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

ENTERPRISE, KANSAS, U. S. A.

Tell 'em you saw it in ROCK PRODUCTS



Cause & Effect

In this day of progress, in the race for Business and Profits, it's foolish to handicap your prospects—HANDLE THE BEST.

This, then, extends to you the use of a progressive organization, and the facilities of 37 Producing Mills, concentrating every effort on the production of the highest quality of Gypsum Products on the American Market.

The fact that the energies of so large an organization are devoted entirely to the production of Gypsum Products—energies backed with ample ability and the earnest desire to make this line the **very best of its kind**—is, in itself, assurance of quality and excellence.

Our mills are advantageously located throughout the country, enabling us to reach all markets with an attractive and economical distribution of our products, and with sales offices from New York to 'Frisco places us in position to give **you** both perfection in products and perfection in intelligent co-operation and service.

The laws of success are as certain as the law of gravity—U. S. G. Products and U. S. G. Co-operation are trade winners in any market. If you keep your latch string always out for **Greater Progress** we are willing to put our time against yours in proving clearly to your mind that you can effectively use our service and our products.

Gypsinite, a Plaster Fireproof Stud

Sackett Plaster Board

U. S. G. Hard Wall Plasters

“ “ “ **Finishes**

**Adamant Plasters, including Adamant 2-C—
the Perfection of Exterior Plaster.**

**We stand ready to prove up. Let's
get together—our interests are mutual.**



Tell 'em you saw it in ROCK PRODUCTS

The Hobbs Concrete Block Machine



THE Hobbs is a quality machine. It has been scientifically designed and accurately built for those who want the best.

THE Hobbs will not only turn out common block cheaper than any other machine but it will produce Real Broken Ashlar at no increase in cost over common work.

OUR catalog fully explains the Hobbs. It tells about the quick but positive changes, the automatic dividing plates, composition face plates and how to produce real broken Ashlar.

THE HOBBS CONCRETE MACHINERY CO., 882 Ford Building DETROIT, MICH.

We want to establish Tesco Marble Factories in the following cities:

New York	Minneapolis
Philadelphia	Denver
Indianapolis	Seattle
Atlanta	Los Angeles
Kansas City	Cuba—Havana
New Orleans	Canada—Montreal
Chicago	Winnipeg and Van Couver

Since Tesco Marble is a real marble in its analysis and surface appearance, the demand has come from all sections of the United States and overwhelmed our present factory facilities in Milwaukee, consequently it becomes absolutely essential to meet the demands.

We are ready to open negotiations with responsible parties for the manufacturing rights in the above named Cities.

Our marble is thoroughly covered by patent rights exclusively our own, thus assuring you of absolute safety on your investment.

Tesco Marble is the marble of the Age. Best financial references required. Full information regarding investment, profits, etc. will be mailed.

Tesco Products Company

N. W. NORRIS, Pres.

Main Offices: 1-3 Builders & Traders Exchange

Milwaukee

It Pays to Advertise In ROCK PRODUCTS



Mr. Bernard L. McNulty,
Francis Publishing Co.,
Chicago, Ill.

Dear Sir:-

In answer to your favor of the 3rd, would state that we have been almost continuous advertisers in Rock Products since the year of 1905 and while not the largest advertisers, we have always felt that the publication paid us handsome returns on the amount expended and we can truly state that the courtesies extended us by the members of your company in the way of write-ups and general help are highly appreciated.

Very truly yours,

CENTURY CEMENT MACHINE CO.

ATB/M

At Bradley

Tell 'em you saw it in ROCK PRODUCTS

\$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢

"NIAGARA" IS THE BRAND

We cannot dwell too strongly upon the increased bulk and consequent greater covering capacities of our "NIAGARA" line of wall plasters, their favorable working qualities under the mechanics' tools and final strength.

Niagara Neat Cement

Niagara Sanded Mortar

Niagara Wood Fibre (Wood Pulp)

Dealers realize the additional dollars in the handling of our products because of their preference by the trade and good sense is displayed in pushing their sale. MIXED CAR LOAD SHIPMENTS of wall plasters, hydrated finishing line, plaster board, land plaster, and calcined plaster for finishing purposes.

ALL BUSINESS DIRECT WITH SALES OFFICE.

NIAGARA GYPSUM CO. BUFFALO, N.Y.

¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢ \$ ¢

ATTENTION! ARCHITECTS & DEALERS

"IT SPREADS LIKE BUTTER"

Which? == "Wheeling"

Why? == { **Better Walls**
Best Service
Right Prices

We want to make this, our tenth year in business, the biggest and best of all, both for our customers and ourselves mutually. Write us, Results will follow. Our booklet "Better Walls" for the asking.
WILL YOU JOIN THE "WHEELING" FAMILY?

Wheeling Wall Plaster Co., Wheeling, W. Va.

Tell 'em you saw it in ROCK PRODUCTS

Cardiff Gypsum Plaster Company

MANUFACTURER OF THE CELEBRATED

Kallolite Cement Plaster, Wood Fibre Plaster, Etc.

SEND FOR PAMPHLET

Fort Dodge
Iowa

PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

Wet Process, Face Down, Damp Curing.

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincible, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE

THE PETTYJOHN COMPANY

614 North Sixth Street Terre Haute, Indiana

Red, Brown, Buff and Black



MORTAR COLORS

The Strongest and
Most Economical
in the Market.



Our Metallic Paints and Mortar Colors are unsurpassed in strength, fineness, and body, durability, covering power and permanency of color. Write for samples and quotations.

CHATTANOOGA PAINT CO.

Chattanooga, Tennessee

1911 Model

MULTIPLEX 40 TON PRESSURE BLOCK MACHINE

A Hand Batch Mixer, Cap, Step and Sill Mold

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Showing Machine Ejecting Block

The Multiplex makes Hollow Blocks, Cavity and Header Bond Systems Inside partition, cistern and silo blocks and flue blocks. Write for full particulars and descriptive catalog.

The Multiplex Concrete Machinery Co.

[Rice Street, Elmore, Ohio]

COLLAPSIBLE STEEL FORMS

FOR CULVERTS, CONDUITS AND SEWERS

The only perfect form for one piece culvert work. The cost of constructing culverts by the use of our Collapsible Steel Forms is the lowest that has yet been reached. Our Booklet tells you why. Free for the asking.

SIMPLE, STRONG, LABOR SAVING .: LIGHT, MODERN, ECONOMICAL



FORM SET UP READY FOR CONCRETE.

These forms are made of 16-gauge galvanized steel covering, reinforced by steel on the inside. The forms are made in any size, working parts easy to reach and easy to operate. No repair expenses. Write for full particulars.

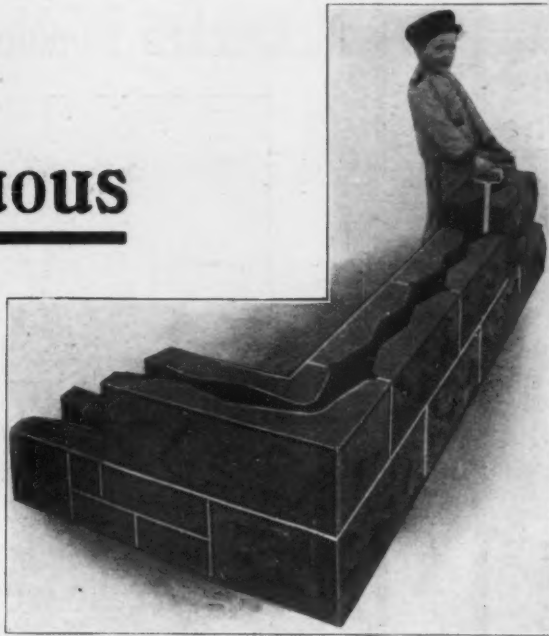
CONCRETE FORM & ENGINE CO.

DETROIT, MICH.

Successors to Collapsible Steel Form Co. and New Belle Isle Motor Co., Detroit.

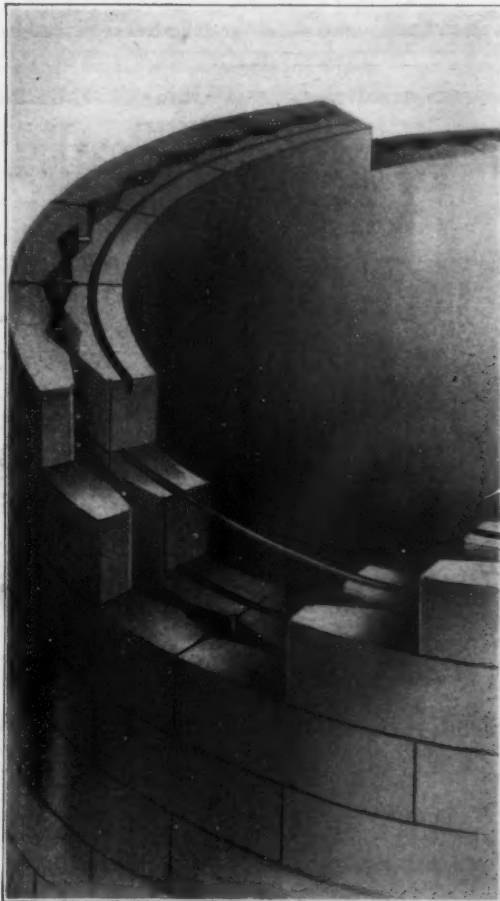
Tell 'em you saw it in ROCK PRODUCTS

Anchor Continuous Air Space Blocks



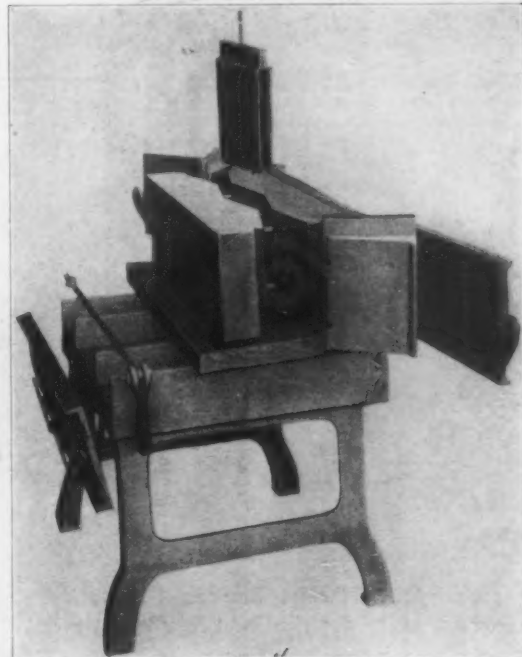
Wall of Anchor Continuous Air Space Blocks. Showing how easy it is to lay them with hooks. The workmen have perfect control of the block in laying same on fresh mortar. Block layers can lay at least one-third more Anchor Blocks than any cement-tied or two-piece blocks, making a great saving in high-priced labor. Many masons refuse to lay the ordinary block with holes in it, for the reason that it has to be handled with the bare hands, while the Anchor Block, as shown by the cut, is placed in the wall with ease, and pointed on inside joints with a full-sized trowel, making a wall that is guaranteed to be proof against fire, wind, moisture and frost.

NOW THE ACCEPTED
STANDARD MACHINE
FOR MAKING CONTIN-
UOUS AIR SPACE
CONCRETE BLOCKS.
GUARANTEED FROST
and MOISTURE PROOF
BECAUSE THERE IS NO
CONCRETE CONNEC-
TION BETWEEN THE
OUTER AND INNER
WALLS.



This cut shows The Anchor Silo, Water Tank and Granary block made with The Anchor adjustable mold box attachments. Mold box will fit any Anchor machine making any circle from 12 to 60 feet. Silos, water tanks and granaries can be built from these perfect circle blocks at the cost of lumber construction.

WRITE FOR
CATALOGUE
AND PRICES



This cut shows the Standard Anchor Machine released from newly-made block, ready to be carried away to cure. Anchor Blocks are not disturbed in releasing machine, as the plates break away with ease, and the center core collapses or shuts up as soon as eccentric is released. Center core is raised by a rope through pulley in ceiling, with equal balance weight. Anchor machines are made in two sizes: Standard machines make blocks that lay in the wall 8x24. Junior machines 8x16. Either machine makes blocks from 8 to 12 inches in width.

Anchor Concrete Stone Company

Rock Rapids, Iowa

Tell 'em you saw it in ROCK PRODUCTS

The Great Success of the New York Cement Show
THE..... LATEST IMPROVED PEERLESS
One-Man Cement Brick Machine

Equipped with new tamping device, which tamps ten bricks in the machine at one operation. Capacity, with material furnished, 12,000 perfectly formed bricks in ten hours.



The superiority of the Peerless Brick Machine was demonstrated conclusively at The Great New York Cement Show.

It is the greatest invention in the industry. Simple, strong and durable. Combines all the advantages of every other machine at the smallest cost.

The most successful and most easily operated one-man brick machine ever made.

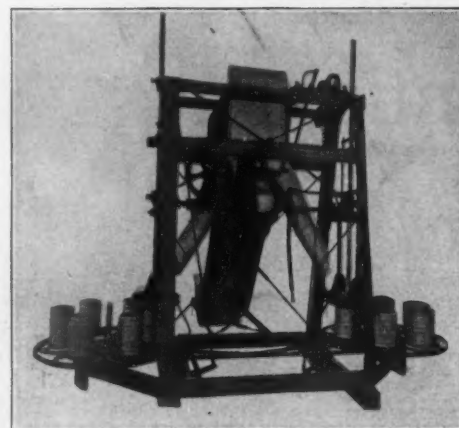
Come to see us at the CHICAGO CEMENT SHOW, February 17-23, 1911, and watch us demonstrate. **Booth No. 97**

WRITE AT ONCE FOR PARTICULARS

Peerless Brick Machine Co.

15 NORTH SIXTH ST., MINNEAPOLIS, MINN.

THE
McCracken Double Tile Machine



The McCracken Double Tile Machine makes all sizes of cement tile from 4 to 16 in. in diameter at the rate of from 10 to 20 tile per minute. Also makes building blocks or construction tile 8x8x16 at the rate of 2000 to 3000 per ten hour day.

The machine will make two different sizes of tile at the same time or building blocks and tile at the same time, or either end of machine can be used without using the other.

The machine has no cams and runs just as smooth at high speed as when running slow. Takes less labor per 1000 tile than any other machine.

Tile are packed so hard that the large sizes can be carried without the use of pallets. Machine is very simple and strong and runs very light, and elevator can be started and stopped without stopping the machine.

See the McCracken Machine before you buy. Write to

The Sioux City Cement Machinery Company
 219 4th Street, SIOUX CITY, IOWA

The Chase Roller Bearing Car
FOR CEMENT, BLOCK AND TILE



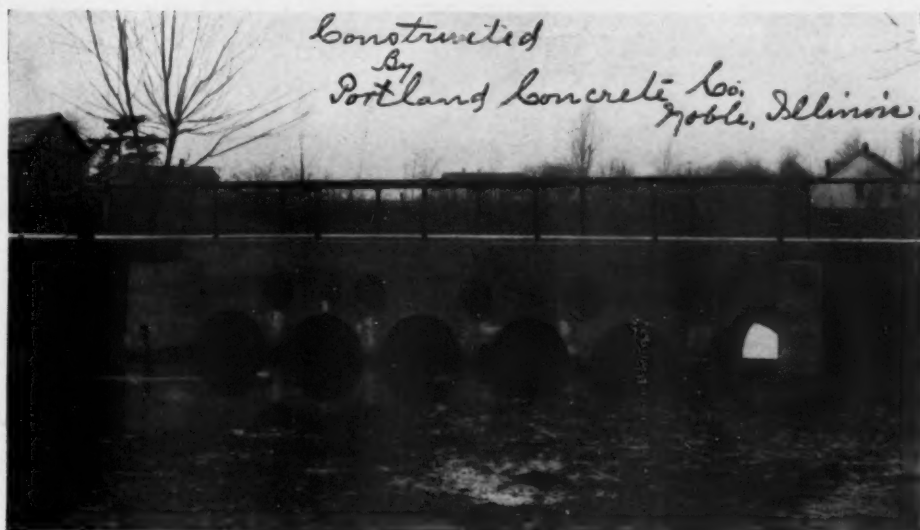
BOTTOM AND SIDE DUMP CARS, TRANSFER CARS, TURNTABLES, SWITCHES, ETC.

You cannot afford to overlook the necessity of handling your material and product as economically as your competitor. Our goods will help you do this.

WRITE US FOR CATALOG AND PRICES

Chase Foundry Manufacturing Co.
 COLUMBUS, OHIO

Tell 'em you saw it in ROCK PRODUCTS



One of the Possibilities with Miracle Collapsible Forms.

Ask for booklet "Concrete Culverts," also our 128 page catalog if you are interested in our general line of concrete machinery.

MARSH CO.

971 Old Colony Bldg. : : CHICAGO

Concrete, Culverts and Bridges

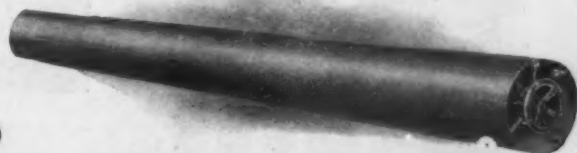
Built [over] the [Miracle Collapsible Forms.

Cheaper than plank, clay pipe or corrugated iron.

Everlasting and attractive.

Investigate the building of one-piece concrete culverts for your township and county.

200 or more culverts needed in the average township every year.



SIMPLICITY

ECONOMY

PERFECTION

The Simplest, Most Compact and Most Practical Brick Machine Made.

Makes Plain or Fancy Brick.

Write Today for Particulars

The Little Giant

Makes Three Perfect Brick in Less Than Twenty Seconds

CEMENT BRICK MACHINE

You are done experimenting when you buy a Little Giant

No Experience Required.

No Capital Necessary.

One Man Can Operate It.

Saves One-fifth of the Material.

SEE OUR DEMONSTRATION AT THE CHICAGO CEMENT SHOW—SPACE 267

LA GRANGE SPECIALTY COMPANY, La Grange, Indiana

Schenk-Stewart Concrete Machinery



THE Schenk-Stewart Line of Concrete Machinery and Equipment is built upon a foundation of good principle and ideas bonded together with experience and mounted upon a base of "quality." Every machine and every piece of equipment in the S. & S. Line is the outcome of good hard study and experience—no device and no idea is ever adopted until it has passed a stringent mechanical inspection and has proven itself of value and advantage by an actual operating test.

The prime object in manufacturing the S. & S. Line is to produce machinery and equipment which will stand the every day "knocks" and abuses—every day service which will tend to assist in the success of the user.

The ultimate thought has been to decrease the cost of up-keep, increase the efficiency and assure entire satisfaction. Factory cost and selling price has been a second consideration and we say to you, who are about to purchase concrete machinery and equipment, look well, and be sure that the trade mark S. & S. is connected in some way with the article of your choice for this mark is nothing short of insurance against poor workmanship, material and principle—a guarantee of success.

THE Schenk-Stewart Line of Concrete Machinery and Equipment includes the well known Schenk Cement Drain Tile Machine, The Perfection Concrete Mixers, The Four-Way Block Machine, Ideal Brick, Block and Transfer Cars, Easy Hand Tile Molds, American Steel Tanks, Sand Screens, Dump Cars, Dump Wagons, Elevators, Friction Hoists, Post Machines, Brick Machines, Crushers, Material Washers, Gasoline Engines, Steam Engines, Boilers, Ornamental Molds, Grinders and a full line of Cement Tools. Therefore, we feel confident that we can comply with your every want.

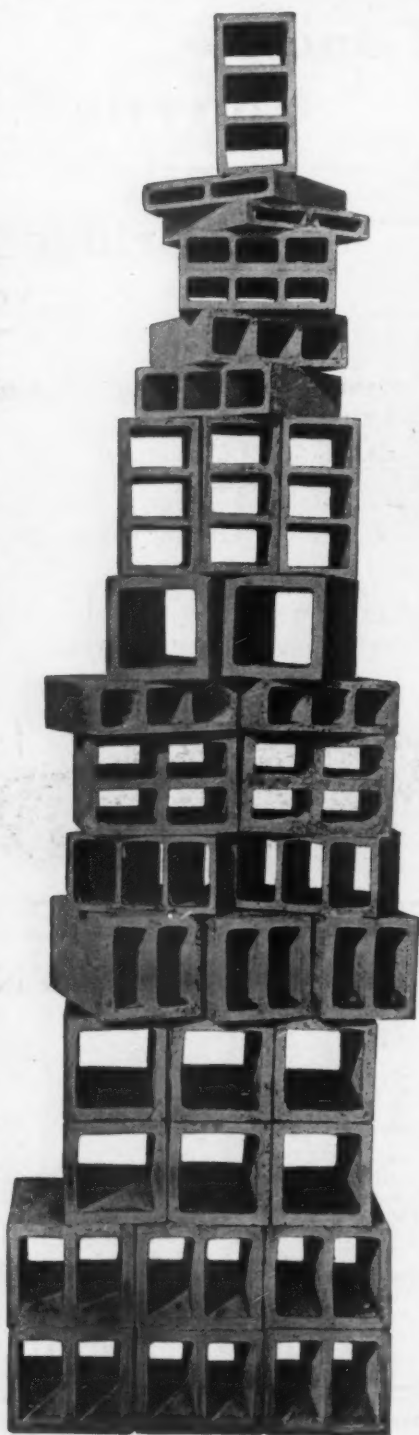
We make a specialty of designing and equipping complete plants for the manufacture of concrete products—teaching you the business from A to Z. Having designed and equipped some of the best and largest plants in the country our co-operation with you on this particular subject will, we are sure, be of mutual benefit.

It would be impossible to tell you all about the S. & S. Line, the factory that builds it and the men behind it in this space, so we ask that you send us your name and address on your business letter head and by return mail we will place in your hands the complete story which can be reviewed at your convenience. Better sit right down and do it now—while the matter is fresh in your mind.

The Cement Tile Machinery Co.

Waterloo, Iowa

Tell 'em you saw it in ROCK PRODUCTS



Our 1910 Catalog

Gives the method of manufacture, fire and compression test data, and the endorsements of local architects and other building authorities. Also many other articles and illustrations of interest to the general public. May we send you, postpaid, a copy of our Catalog?

The Concrete Stone & Sand Co.
Youngstown, Ohio.



Has The First *Pauly* Concrete Tile Plant Been Successful?

This question, which is usually first asked us by interested parties, is best answered by two facts:—1. During the year of 1909, the demand in Youngstown, Ohio, could not be satisfied, and (2) the plants capacity output is sold until the middle of the summer of 1910, in the **City of Youngstown alone**. In this connection it might be stated also that 4 tiles of our most common size, 8x8x16, can be manufactured from one cubic foot of concrete, with a labor cost of 50 per cent of the cost of concrete anywhere east of the Mississippi.

A weatherproof home of fireproof material can now be built for almost wooden construction cost. These points have been clearly demonstrated in Youngstown by practical use of *Pauly* Concrete Structural and Fireproofing Tile, in a variety of buildings. The result gained has not only been a financial success, but also an enviable position in the estimation of the entire building public.

Persons interested in this practical and profitable phase of the concrete business, are always welcome by the The Concrete Stone & Sand Co., Youngstown, Ohio, where they will be shown every detail of the initial factory.

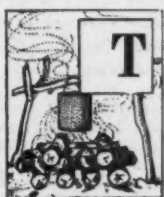


Tell 'em you saw it in ROCK PRODUCTS

CROWN POINT SPAR CO.

21 West 4th Street, New York City

You Are Not Experimenting When You Use Granite Crystals



TO do away with the plain, monotonous-faced concrete and add sparkle and color to your concrete work.

☐ Successfully used as a facing for any concrete work to give the surface a live appearance, especially in building residences, stores, factories, bridges, railroad Stations, public buildings, etc., in either concrete, concrete blocks or stucco.

☐ Concrete with Granite Crystals added surpasses the natural Granite and makes sidewalks durable and beautiful.

☐ Has been used by McAdoo Construction Co., L. I. Railroad Co., Rocky River Bridge—the largest concrete bridge in the world—and hundreds of other prominent structures and churches throughout the country.

Cost of GRANITE CRYSTALS Is Insignificant in Comparison with Results

SPECIAL OFFER

We offer you as an inducement, on trial, 300 pounds of Granite Crystals for \$1.00; F. O. B. Crown Point, N. Y., also formulas, provided you fill out the attached coupon.

Crown Point Spar Company

21 West 4th Street, New York

Crown
Point
Spar Co.,

21 W. 4th
street, New
York.

Please send the undersigned a sample of granite crystals, containing 300 lbs., consisting of 3 100-lb. bags, assorted sizes, for which we enclose \$1.00.

Yours truly,

Tell 'em you saw it in ROCK PRODUCTS

HERCULES BLOCK MACHINES

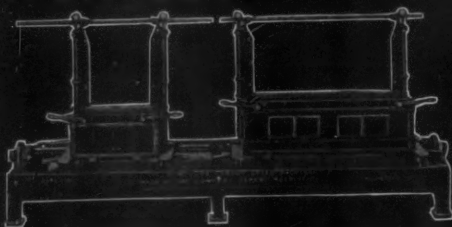
ARE THE FASTEST, SIMPLEST,
STRONGEST AND
BEST MACHINES BUILT

AND WE CAN PROVE IT
THEY EXPAND TO MEET EVERY DEMAND

THE ONLY machine making any size of stone from
a 3 inch block to a 6 foot water table.

THE ONLY face down machine that allows for a
really coarse WET mixture with fine facing.

THE ONLY machine on which four 16 inch stone
can be made at ONE time, or two 20 inch, 24 inch
or 32 inch stone at one time.



THE HERCULES IS AN OLD
ESTABLISHED MACHINE

Built along Correct Lines and Endorsed by the Leading
Contractors and Builders. They are used in all parts
of the world.

Hercules Machines

are the BEST for
you—Because
they go Further—
Do more and Do
it Better than
other machines.

They are un-
limited as to
production.
You can start
with a small
equipment and
add to it grad-
ually according
to the demand.

And not be
compelled to
be continually
buying new
machines.

If you are going
to manufacture Con-
crete Blocks write
for our Catalogue.

Century Cement Machine

288-298 St.
Co. Paul Street
ROCHESTER, N. Y.

Perfection at Last Attained in the Concrete Block Industry

The Perfection Power Block Machine is the only Power Block Machine on the
market, making a Hollow Concrete Building Block under Heavy Pressure and
at Great Speed.

Machines have been in constant use since July 1st, 1905, with practically no
expense for repairs.

The machine handles sand, gravel, crushed rock, slag and coloring materials
perfectly.

All materials accurately measured, thoroughly mixed and uniformly pressed
under 200,000 pounds pressure.

Makes 8, 9 and 12x8x24 inch blocks in five faces and fractional and angle blocks.

Machine can be arranged to make Two Piece and Faced Blocks, if desired.

All machines delivered set up and put in operation to show a guaranteed
capacity of 60 blocks (12x8x24 inch) per hour with five men.

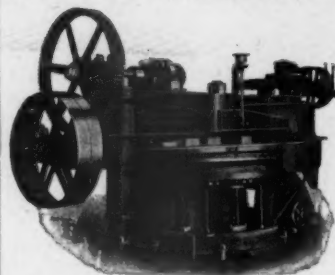
Blocks perfectly cured in 24 hours in Vapor Curing Kilns of our own design.

Full details, catalog, testimonials, etc., sent upon request.

THE PERFECTION BLOCK MACHINE CO.
SIOUX FALLS, SOUTH DAKOTA.

The American Sandstone Brick Machinery Co.

SAGINAW, MICH.



Improved Saginaw Rotary Press.

Built either right or left handed in three
sizes of capacities of 800, 1400 and 2200
brick per hour. Can be equipped with extra
table for making face and fancy brick on
which double pressure is exerted.

Complete Sandstone Brick
Plants or Partial Equip-
ments Installed Under Ab-
solute Guarantees as to Ca-
pacity, Quality, and Cost of
Production.

WE are the oldest manufacturers of
Sand Lime Brick Machinery in the
U. S. today, and have more successful
plants in operation than any other
Company. Why not profit by our ex-
perience? Send us samples of your
sand and let us advise you as to its
quality for brick purposes and what
machinery you will require to produce
the best results. Write for catalogue
"C" describing our system in detail.

SAND LIME OR SILICATE BRICK



This plant located at South River, N. J., was formerly intended to operate
under the "Division System" but is now being reconstructed to conform in
every detail to the Wiebe-Hydro-Lime-Silicate-Process, and will be when
completed the largest plant in the United States with a daily capacity of
100,000 brick.

SAND DRYER

High efficiency and durability

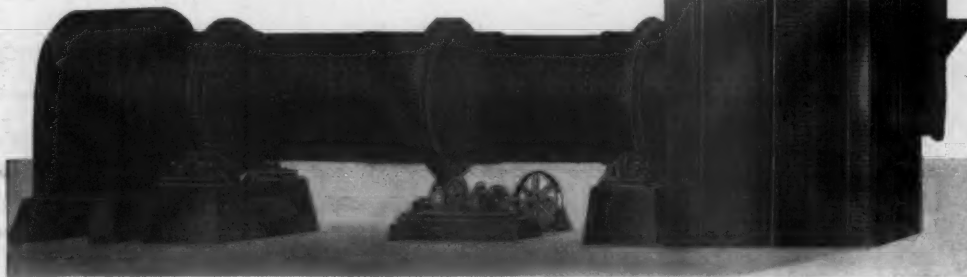
RESUME

Dating as far back as 1901,
when the manufacturing of
commercial silicate brick was
introduced into this country,
no system has been more suc-
cessful than the so called "Silo"
or "Division" method.

In the ratio that the Silo or
Division Process is superior to
all other systems hitherto em-
ployed, in that proportion the
Wiebe-Hydro-Lime-Silicate pro-
cess is superior to the Division
method.

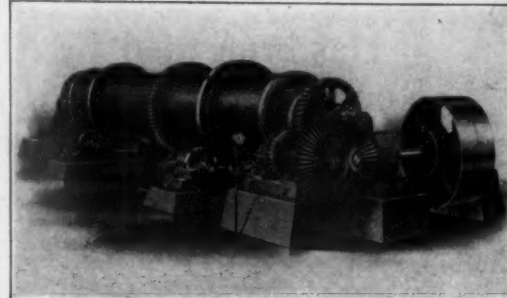
All other processes are com-
mercial impossibilities, and those
who are operating under these
old methods are losing money
and producing an inferior
quality of brick.

Will dry your sand perfectly and still deliver it at the discharge end at a very low
temperature. At the point where the material contains the most moisture it strikes the
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MANUFACTURED under the Wiebe
Hydro-Lime-Silicate-Process, and by
our specially designed machinery, have
been acknowledged by leading engineers,
architects and organizations of New York City
to be the most perfect sand brick in the
country. Compression as well as transverse
strength, and its non-absorptive qualities far
excel the requirements of the city.

BY THE INTRODUCTION of our
process and special machinery in this country,
a large and profitable field is thrown open to
the American manufacturer engaged in this
industry. The product from same is perfect,
beautiful, and unexcelled.



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Eliminates your doubts and wor-
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complete or successful without this
machine. Receiving the material
from the Silo, it prepares and de-
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Do you wish to know WHY our
process is superior to all others? If
you have any experience in the
production of silicate brick, and will
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stand why, and you will then readily
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strate the superiority of our system
over all others.

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Fancy Brick, Roofing and Wall Tiles.

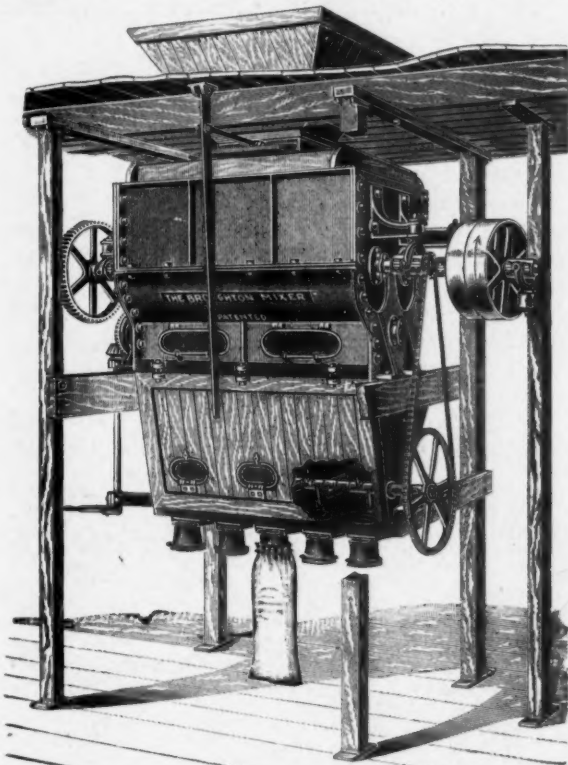
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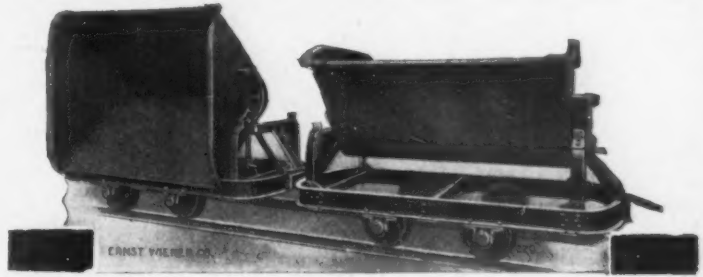
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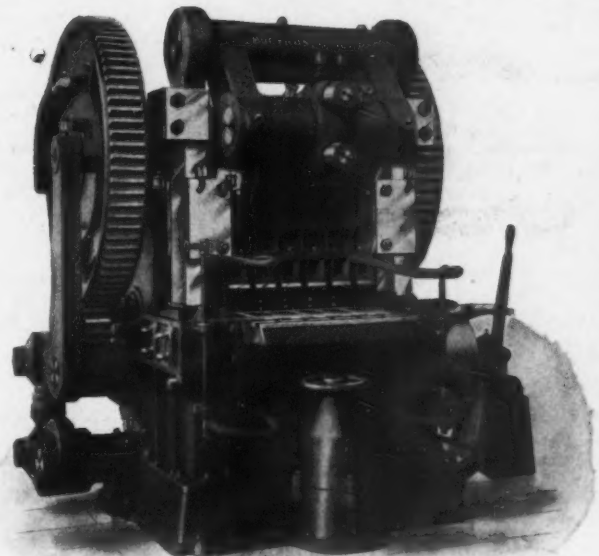
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